FLORIDA FIRST PROCESSING L.P.

Protecting Florida's Environmental Future

RCRA Part B & Air Permit Application

Volume V

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-1

AIR PERMIT APPLICATION

FOR

HAZARDOUS WASTE INCINERATOR STACK

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: HAZARDOUS WASTE INCINERATOR STACK [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [X] Operation [ ] Modification

COMPANY NAME: FLORIDA FIRST PROCESSING, LP COUNTY: POLK

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) ______

SOURCE LOCATION: Street WEST SIDE OF FORT GREEN ROAD, 3/4 MILES SOUTH OF COUNTY ROAD 630 City POLK COUNTY

UTM: East 405 North 30 66 500m

Latitude 27 ° 43 ' 15 "N Longitude 81 ° 57 ' 45 "W

APPLICANT NAME AND TITLE: DR. ANTHONY F. MOSCATI, MANAGING DIRECTOR, FFP, LP

APPLICANT ADDRESS: 8150 LEESBURG PIKE, SUITE 700, VIENNA, VA 22182

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of FLORIDA FIRST PROCESSING, LP

I certify that the statements made in this application for a CONSTRUCTION & OPERATION permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: [signature]

DR. ANTHONY F. MOSCATI, MANAGING DIRECTOR
Name and Title (Please Type)

Date: 10-28-90 Telephone No. 703-883-8270

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

DICK M. MILLER
CERTIFICATE
No. 20927
STATE OF
FLORIDA
REGISTERED ENGINEER

Signed ______________________

DICK M. MILLER
Name (Please Type)

INTERNATIONAL WASTE ENERGY SYSTEMS, INC.
Company Name (Please Type)

ROBINSON PLAZA II, SUITE 200, PITTSBURGH, PA 15205
Mailing Address (Please Type)

Florida Registration No. 20927 Date: 10/26/90 Telephone No. 412-281-5222

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

CONSTRUCTION OF RCRA-PERMITTED HAZARDOUS WASTE INCINERATOR AND ASSOCIATED WASTE STORAGE & HANDLING UNITS. EMISSIONS FROM THE INCINERATOR WILL BE CONTROLLED BY SPRAY DRYER ABSORBER AND FABRIC FILTER. EMISSIONS FROM THE WASTE STORAGE AND HANDLING UNITS WILL BE CONTROLLED BY A CARBON BED ABSORPTION SYSTEM AND BY VENTING EMISSIONS TO THE INCINERATOR.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction SUMMER 1991 Completion of Construction 1993

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

THE ESTIMATED COST OF THE POLLUTION CONTROL DEVICES FOR THE INCINERATOR AND OTHER MATERIAL HANDLING/TREATMENT SYSTEMS IS OVER $5000000. A DETAILED BREAKDOWN OF THE INDIVIDUAL POLLUTION CONTROL DEVICES IS NOT AVAILABLE AT THIS TIME.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

N/A,

H.Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 200 ft. Stack Diameter: 5.5 ft.

Gas Flow Rate: 71,000-81,000 ACFM 28,670-32,707 DSCFM Gas Exit Temperature: 365 °F.

Water Vapor Content: 36.91% by volume % Velocity: 49.8 to 56.8 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patho-logical)	Type V Liq & Gas By-prod)	Type VI (Solids By-prod)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste : ______

Total Weight Incinerator (lbs/hr) ______ Design Capacity (lbs/hr) 34,000

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. 50

Manufacturer: ______

Date Constructed: ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ Stack Diameter: ______ Stack Temp.: ______

Gas Flow Rate: ______ ACFM ______ DSCFM * Velocity ______

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air. Particulates: 0.02666 gr/dscf

Type of pollution control device [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

H.Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: ______ ft. Stack Diameter: ______ ft.

Gas Flow Rate: ______ ACFM ______ DSCFM Gas Exit Temperature: ______ °F.

Water Vapor Content: ______ % Velocity: ______ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patho-logical)	Type V Liq & Gas By-prod)	Type VI (Solids By-prod)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste : Hazardous waste solids, sludges and liquids

Total Weight Incinerator (lbs/hr) 34,000 Design Capacity (lbs/hr) 34,000

Approximate Number of Hours of Operation per day 24 day/wk 7 wks/yr. 50

Manufacturer: Custom designed unit made by International Waste Energy Systems

Date Constructed: Construction to commence in Spring/Summer 1990. Model No. N/A since the unit is custom made

	Volume (ft^3)	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber	6,296	50×10^6	No. 2 fuel oil	25×10^6	1400° - 2200°F
Secondary Chamber	4,903	39×10^6	No. 2 fuel oil	39×10^6	1800°F (with capability to go up to 2200°F)

Stack Height: 200 ft. Stack Diameter: 5.5 feet Stack Temp.: 365°F

Gas Flow Rate: 71,000 to 81,000 ACFM 28,670 to 32,707 DSCFM * Velocity 49.8 to 56.8 FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air. Particulates: 0.02666 gr/dscf

Type of pollution control device [ ] Cyclone [ ] Wet Scrubber [X] Afterburner

[x] Other (specify) Spray Dryer - Fabric Filter

ADDENDUM TO AIR PERMIT APPLICATION FOR THE HAZARDOUS WASTE INCINERATOR STACK

Section V - Items 2, and 3

~~Secondary Combustion Chamber (SCC)~~

Air Pollution Control Devices: Spray Dryer (SDA)
Fabric Filter (FF)

Maximum emission estimates for all the pollutants from the incinerator stack are presented as follows:

POLLUTANT		BASIS FOR ESTIMATE OF EMISSION RATE	CONTROLLED EMISSIONS lb/hr	tons/yr
TABLE 500-2 POLLUTANTS				
Sulfur dioxide	(SO_2)	avg. 2.37% S in waste feed	45.23	190.0
Nitrogen oxides	(NO_x)	max. 200 ppm dry volume	41.63	174.8
Carbon monoxide	(CO)	max. 100 ppm dry volume	12.56	52.75
Organic compounds	(VOC)	minimum 99.99% DRE	1.66	6.97
Particulate[1]	(PM-10)	max. 0.02 gr. dscf PM-10 corrected to 7% 0_2	2.93	12.31
Reduced sulfur	(as H_2S)	filtrate feed to SDA	0.0125	0.0525
Sulfuric acid mist	(as SO_4)	5% total $S0_2$ emissions	2.26	9.5
Total fluorides	(as HF)	max. 110 lb hr F feed	1.18	4.88
Vinyl chloride		avg. 1.0% in waste feed	0.0166	0.0695
Lead	(Pb)	avg. 0.473% of waste feed	0.903	3.79
Mercury	(Hg)	avg. 0.031% of waste feed	0.292	1.23
Asbestos		no asbestos waste accepted	NOT DETECTABLE	NOT DETECTABLE
Beryllium	(Be)	avg. 0.0010% of waste feed	0.00091	0.0038
ACID GASES & OTHER POLLUTANTS				
Ammonia	(NH_3)	filtrate feed to SDA	0.0076	0.0319
Cyanide	(as CN)	filtrate feed to SDA	0.00013	0.00055
Hydrogen Chloride	(HCl)	max. 1,202 lb/hr HCl	12.0	50.4
Phenol		filtrate feed to SDA	0.025	0.105
Phosphorous	(as $P_2 0_5$)	filtrate feed to SDA	0.0057	0.0239
OTHER METALS				
Arsenic	(As)	avg. 0.048% of waste feed	0.0938	0.394
Cadmium	(Cd)	avg. 0.087% of waste feed	0.166	0.696
Chromium	(Cr)	avg. 0.052% of waste feed	0.0497	0.209
Antimony	(Sb)	avg. 1.311% of waste feed	2.50	10.5
Barium	(Ba)	avg. 0.524% of waste feed	0.499	2.10
Silver	(Ag)	avg. 0.522% of waste feed	0.497	2.09
Thallium	(Tl)	avg. 0.435% of waste feed	0.829	3.48

[1] A conservative estimate is made that the entire particulate matter is composed of particulates having an average diameter less than or equal to 10μm.

Date: 10/15/90
Revision: 2

Section V - Items 2 and 3 (Continued)

The oxygen and moisture content in the stack gas are estimated to be:

O_2	10,010 lbs/hr
H_2O	45,361 lbs/hr

These emission rates were used in estimating the particulate emission in terms of grains per dry standard cubic foot, corrected to 7% O_2.

Section V - Item 4

The air pollution control equipment (APCE) consists of a spray dryer absorber (SDA) and a fabric filter (FF). A description of the operation of each of the control devices is given as follows:

~~Secondary Combustion Chamber~~

~~The incineration system consists of a secondary combustion chamber to ensure the highest degree of destruction of the residual hydrocarbons which might have been partially combusted in the kiln. The SCC will be operating at a minimum temperature of 1800°F. The specifications of the SCC are as follows:~~

~~Outer diameter:~~	~~12'-2"~~
~~Inner diameter:~~	~~11'-0"~~
~~Cross sectional area:~~	~~95 ft^2~~
~~Effective volume:~~	~~4,003 ft^3~~
~~Residence time:~~	~~>2 seconds (based on a stack gas flow of 68,555 ACFM at 365°F the SCC gas residence time is 2.35 seconds)~~
~~Operating temperature:~~	~~1,800°F - 2,200°F~~
~~VOC reduction efficiency:~~	~~99.99%~~

Spray Dryer Absorber (SDA):

The spray dryer absorber serves three functions:

1. Cool the combustion gases from a range of 1800°F - 2200°F to a range of 350°F - 450°F;

2. Neutralize and remove acid gas from the combustion gases; and

3. Remove a portion of the particulate from these gases.

Combustion gases enter from the bottom of this unit, flow up through a central refractory-lined duct, and are dispersed symmetrically from this duct into the absorber chamber where they will come in contact with a cloud of atomized lime slurry droplets introduced into the chamber by a rotary atomizer.

The water content of the slurry will cool the gases and the lime in the slurry will react with HCl, HF, and SO_2 in the gases to produce calcium salts. Some of the resulting dry material consisting of calcium salts, flyash, and excess lime will fall into the conical bottom of the unit from where it will be conveyed into a lugger for transport to off site disposal.

Dimensions:	36'-9" (OD) and 82' high
Lime slurry rate:	5 - 130 gpm

Fabric Filter:

The fabric filter will consist of 4 compartments through which combustion gases will pass for particulate removal.

Specifications:

Air-to-cloth ratio:	4:1 maximum (with one compartment off-line for cleaning)
No. of bags/compartment:	210
Dimension of a bag:	6" OD by 20' long
Filter medium:	16 oz/yd^2 woven fiberglass with a Teflon finish
Pressure differential:	2-8" wc
Control efficiency:	99% for TSP and PM-10

The total APCE (Spray Dryer Absorber and Fabric Filter) has a combined control efficiency of 90% for SO_2 and 99% for HCl and HF (test results and manufacturer's data).

In addition, the APCE has a combined, conservatively estimated removal efficiency of 98% for metal emissions (90% for the removal of mercury), as per the EPA Document Draft Guidance on Metals and Hydrogen Chloride Controls for Hazardous Waste Incinerators, March 1989.

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-30

PTPLU-2 MODEL RUN

FOR

CARBON ADSORPTION/CHILLER STACK

1 PTPLU-2.0 (DATED 86196)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 3. NON-GUIDELINE MODELS.
IN UNAMAP (VERSION 6) JUL 86
SOURCE: FILE 21 ON UNAMAP MAGNETIC TAPE FROM NTIS.

IBM-PC VERSION 1.20

SERIAL NUMBER 5959 SOLD TO ICF TECHNOLOGY, INC.
RUN BEGAN ON 09-27-90 AT 14:15:48

>>>INPUT PARAMETERS<<<

*** TITLE*** Chiller -- with stack

```
***OPTIONS***                     ***METEOROLOGY***                             ***SOURCE***
IF = 1, USE OPTION                AMBIENT AIR TEMPERATURE =   293.15 (K)        EMISSION RATE =      .01 (G/SEC)
IF = 0, IGNORE OPTION             MIXING HEIGHT           =  5000.00 (M)        STACK HEIGHT  =    22.86 (M)
IOPT(1) = 0 (GRAD PLUME RISE)     ANEMOMETER HEIGHT       =    10.00 (M)        EXIT TEMP.    =   293.15 (K)
IOPT(2) = 1 (STACK DOWNWASH)      WIND PROFILE EXPONENTS  = A: .07, B: .07, C: .10  EXIT VELOCITY =  6.10 (M/SEC)
IOPT(3) = 1 (BUOY. INDUCED DISP.)                           D: .15, E: .35, F: .55  STACK DIAM.   =   .14 (M)
IDFLT   = 1 (1 = USE DEFAULT, 0 = NOT USE DEFAULT)
MUOR    = 2 (1 = URBAN, 2 = RURAL)
0***RECEPTOR HEIGHT*** =      .00 (M)
```

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = .09 (M**3/SEC)   BUOYANCY FLUX PARAMETER = .00 (M**4/SEC**3)

Chiller -- with stack

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
1	.50	3.95	.144	28.0	.53	3.80	.143	27.7
1	.80	2.81	.135	26.1	.85	2.69	.134	25.9
1	1.00	2.35	.132	25.4	1.06	2.25	.131	25.3
1	1.50	1.67	.128	24.6	1.59	1.59	.127	24.5
1	2.00	1.29	.126	24.1	2.12	1.23	.125	24.1
1	2.50	1.06	.124	23.9	2.65	1.00	.124	23.8
1	3.00	.89	.123	23.7	3.18	.85	.123	23.7

0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
2	.50	4.02	.196	28.0	.53	3.87	.194	27.7
2	.80	2.89	.182	26.1	.85	2.76	.181	25.9
2	1.00	2.43	.177	25.4	1.06	2.32	.176	25.3
2	1.50	1.73	.171	24.6	1.59	1.65	.170	24.5
2	2.00	1.34	.168	24.1	2.12	1.28	.167	24.1
2	2.50	1.10	.166	23.9	2.65	1.04	.165	23.8
2	3.00	.93	.165	23.7	3.18	.88	.164	23.7
2	4.00	.71	.163	23.5	4.24	.67	.163	23.4
2	5.00	.58	.162	23.3	5.30	.55	.161	23.2

0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
3	2.00	1.43	.247	24.1	2.17	1.33	.246	24.0
3	2.50	1.17	.245	23.9	2.72	1.08	.244	23.8
3	3.00	.99	.243	23.7	3.26	.92	.242	23.6
3	4.00	.75	.240	23.5	4.34	.70	.239	23.4
3	5.00	.61	.238	23.3	5.43	.57	.237	23.2
3	7.00	.45	.235	23.0	7.60	.41	.235	23.0
3	10.00	.32	.233	22.9	10.86	.29	.233	22.8
3	12.00	.27	.232	22.8	13.03	.25	.232	22.8
3	15.00	.22	.232	22.7	16.29	.20	.231	22.7

1

0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
4	.50	3.61	.527	28.0	.57	3.34	.514	27.4
4	.80	2.62	.484	26.1	.91	2.39	.476	25.7
4	1.00	2.21	.470	25.4	1.13	2.00	.463	25.1
4	1.50	1.59	.451	24.6	1.70	1.43	.446	24.4
4	2.00	1.23	.441	24.1	2.26	1.11	.438	24.0
4	2.50	1.01	.435	23.9	2.83	.90	.433	23.8
4	3.00	.85	.432	23.7	3.40	.76	.429	23.6
4	4.00	.65	.427	23.5	4.53	.58	.424	23.4
4	5.00	.53	.422	23.3	5.66	.47	.420	23.2
4	7.00	.39	.417	23.0	7.92	.35	.415	23.0
4	10.00	.28	.413	22.9	11.32	.25	.412	22.8

4	12.00	.23	.411	22.8	13.58	.21	.410	22.8
4	15.00	.19	.409	22.7	16.98	.17	.409	22.7
4	20.00	.14	.408	22.7	22.64	.13	.407	22.6

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
5	2.00	1.08	.684	24.1	2.67	.83	.673	23.8
5	2.50	.89	.675	23.9	3.34	.68	.665	23.6
5	3.00	.75	.669	23.7	4.01	.57	.661	23.5
5	4.00	.57	.661	23.5	5.34	.44	.651	23.2
5	5.00	.47	.653	23.3	6.68	.36	.645	23.1

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	2.00	.93	1.174	24.1	3.15	.62	1.138	23.7
6	2.50	.76	1.155	23.9	3.94	.50	1.126	23.5
6	3.00	.65	1.142	23.7	4.73	.43	1.114	23.3
6	4.00	.50	1.126	23.5	6.30	.33	1.097	23.1
6	5.00	.41	1.110	23.3	7.88	.27	1.086	23.0

0 (1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

RUN ENDED ON 09-27-90 AT 14:16:07

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-39

INPUFF MODEL RESULTS

FOR

BAGHOUSE BYPASS EVENT

INPUFF 2.3 MULTIPLE SOURCE INTEGRATED PUFF MODEL

FFPI Incinerator Stack --- Emissions Under Fabric Filter Bypass Conditions

M O D E L   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

USER SUPPLIED WIND FIELD	F
UNIT 22 OUTPUT OPTION	F
PRINT PUFF INFORMATION	T
INTERMEDIATE CONCENTRATIONS	T

DISPERSION CALCULATED USING PASQUILL-GIFFORD (DISTANCE DEPENDENT) SIGMA CURVES,
WITH TRANSITION TO DRAXLER'S LONG RANGE TRANSPORT SIGMA-Y AT SYMAX =   1000.0 METERS.

B E G I N   A N A L Y S I S   O F   S O U R C E   N U M B E R   1

S O U R C E   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

STACK DOWNWASH	F
BUOYANCY INDUCED DISPERSION	F
DEPOSITION AND SETTLING	F
USER PLUME RISE	F
PERFORM PUFF COMBINATIONS	T

I N P U T   P A R A M E T E R S

SOURCE UPDATE INTERVAL =   60 SECONDS.   (-1 INDICATES NO UPDATE)
START CONCENTRATION CALCULATIONS AT TIME =   0 SECONDS.
ANEMOMETER HEIGHT = 10.0 METERS.

*** I N F O R M A T I O N   F O R   S O U R C E   N U M B E R   1 ***

SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	COORD. AT TIME 0 SECONDS EAST (KM)	NORTH (KM)
.604E+03	60.97	477.400	7.990	1.678	17.660	0.000	20.000

SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	PLUME HEIGHT (M)	INITIAL SIGMAS (R) (M)	INITIAL SIGMAS (Z) (M)	DEPOSITION VELOCITY (CM/SEC)	SETTLING VELOCITY (CM/SEC)
0.000	0.0	115.62	1.5	1.5	0.00	0.00

*** S O U R C E   U P D A T E   T A B L E ***

TIME (SEC)	SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	INITIAL SIGMAS (R) (M)	INITIAL SIGMAS (Z) (M)
0	.604E+03	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
60	.604E+03	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
120	.106E+03	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
180	.756E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
240	.454E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
300	.302E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
360	.226E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
420	.152E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5

480	.152E+02	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
540	.760E+01	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
600	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
660	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
720	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
780	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
840	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
900	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
960	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1020	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1080	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1140	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1200	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1260	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1320	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1380	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1440	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1500	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1560	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1620	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1680	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5
1740	.000E+00	60.97	477.400	7.990	1.678	17.660	0.000	0.0	1.5	1.5

*** M E T E O R O L O G Y ***

WIND DIR. (DEG)	WIND SPD. (M/SEC)	MIXING HGT. (M)	PROF.EP (DIMEN)	STABILITY (CLASS)	U PLUME (M/SEC)	TEMP (K)	SIGMA TH. (RAD.)	SIGMA PH. (RAD.)
270.0	3.000	1500.	0.150	4	4.331	290.0	0.1750	0.1120

SIMULATION PERIOD START (SEC)	SIMULATION PERIOD STOP (SEC)	SIMULATION TIME (SEC)	PUFF RELEASE RATE (SEC)	SOURCE RECEPTOR DISTANCE (KM)	PUFF COMB. CRITERION (SIGMAS)
0	1800	1800	60.000	0.20	1.000

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 0 TO 60 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 60 TO 120 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01

4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 120 TO 180 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.561E-17
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 180 TO 240 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	2.260E-06
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 240 TO 300 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	2.274E-06
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 300 TO 360 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	4.110E-07
1.500	20.000	0.000	1.372E-05
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01

4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 360 TO 420 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	2.854E-07
1.500	20.000	0.000	3.236E-04
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 420 TO 480 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.717E-07
1.500	20.000	0.000	3.256E-04
2.250	20.000	0.000	6.682E-07
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 480 TO 540 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.141E-07
1.500	20.000	0.000	6.953E-05
2.250	20.000	0.000	2.579E-04
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 540 TO 600 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	8.529E-08
1.500	20.000	0.000	4.221E-05
2.250	20.000	0.000	7.720E-04
3.000	20.000	0.000	2.996E-08
3.100	20.000	0.000	1.185E-09
3.200	20.000	0.000	2.977E-11
3.750	20.000	0.000	0.000E-01

4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 600 TO 660 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	5.741E-08
1.500	20.000	0.000	2.566E-05
2.250	20.000	0.000	6.221E-04
3.000	20.000	0.000	2.956E-05
3.100	20.000	0.000	5.414E-06
3.200	20.000	0.000	6.814E-07
3.750	20.000	0.000	0.000E-01
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 660 TO 720 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	5.724E-08
1.500	20.000	0.000	1.702E-05
2.250	20.000	0.000	1.865E-04
3.000	20.000	0.000	4.544E-04
3.100	20.000	0.000	2.370E-04
3.200	20.000	0.000	9.267E-05
3.750	20.000	0.000	1.994E-09
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 720 TO 780 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	2.880E-08
1.500	20.000	0.000	1.261E-05
2.250	20.000	0.000	9.639E-05
3.000	20.000	0.000	8.821E-04
3.100	20.000	0.000	7.764E-04
3.200	20.000	0.000	5.911E-04
3.750	20.000	0.000	2.456E-06
4.500	20.000	0.000	0.000E-01
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 780 TO 840 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.806E-10
1.500	20.000	0.000	8.646E-06
2.250	20.000	0.000	5.968E-05
3.000	20.000	0.000	6.245E-04
3.100	20.000	0.000	7.887E-04
3.200	20.000	0.000	8.628E-04
3.750	20.000	0.000	1.020E-04

4.500	20.000	0.000	1.951E-10
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 840 TO 900 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	8.308E-06
2.250	20.000	0.000	4.027E-05
3.000	20.000	0.000	2.361E-04
3.100	20.000	0.000	3.520E-04
3.200	20.000	0.000	5.111E-04
3.750	20.000	0.000	5.059E-04
4.500	20.000	0.000	2.240E-07
5.250	20.000	0.000	0.000E-01
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 900 TO 960 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	4.237E-06
2.250	20.000	0.000	2.899E-05
3.000	20.000	0.000	1.139E-04
3.100	20.000	0.000	1.464E-04
3.200	20.000	0.000	1.999E-04
3.750	20.000	0.000	7.688E-04
4.500	20.000	0.000	1.589E-05
5.250	20.000	0.000	2.617E-11
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 960 TO 1020 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	1.696E-07
2.250	20.000	0.000	2.185E-05
3.000	20.000	0.000	6.965E-05
3.100	20.000	0.000	8.363E-05
3.200	20.000	0.000	1.022E-04
3.750	20.000	0.000	5.288E-04
4.500	20.000	0.000	1.640E-04
5.250	20.000	0.000	2.478E-08
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1020 TO 1080 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	6.105E-10
2.250	20.000	0.000	1.782E-05
3.000	20.000	0.000	4.727E-05
3.100	20.000	0.000	5.453E-05
3.200	20.000	0.000	6.372E-05
3.750	20.000	0.000	2.325E-04

4.500	20.000	0.000	4.818E-04
5.250	20.000	0.000	2.307E-06
6.000	20.000	0.000	0.000E-01

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1080 TO 1140 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	8.970E-13
2.250	20.000	0.000	8.085E-06
3.000	20.000	0.000	3.363E-05
3.100	20.000	0.000	3.844E-05
3.200	20.000	0.000	4.391E-05
3.750	20.000	0.000	1.112E-04
4.500	20.000	0.000	6.155E-04
5.250	20.000	0.000	3.918E-05
6.000	20.000	0.000	3.357E-09

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1140 TO 1200 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	8.255E-07
3.000	20.000	0.000	2.634E-05
3.100	20.000	0.000	2.848E-05
3.200	20.000	0.000	3.152E-05
3.750	20.000	0.000	6.612E-05
4.500	20.000	0.000	4.267E-04
5.250	20.000	0.000	1.977E-04
6.000	20.000	0.000	3.525E-07

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1200 TO 1260 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	2.144E-08
3.000	20.000	0.000	1.937E-05
3.100	20.000	0.000	2.267E-05
3.200	20.000	0.000	2.514E-05
3.750	20.000	0.000	4.446E-05
4.500	20.000	0.000	1.867E-04
5.250	20.000	0.000	4.595E-04
6.000	20.000	0.000	3.933E-06

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1260 TO 1320 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	2.572E-10
3.000	20.000	0.000	8.248E-06
3.100	20.000	0.000	1.261E-05
3.200	20.000	0.000	1.685E-05
3.750	20.000	0.000	3.184E-05

4.500	20.000	0.000	9.554E-05
5.250	20.000	0.000	5.164E-04
6.000	20.000	0.000	4.766E-05

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1320 TO 1380 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	2.084E-12
3.000	20.000	0.000	1.371E-06
3.100	20.000	0.000	3.191E-06
3.200	20.000	0.000	6.131E-06
3.750	20.000	0.000	2.467E-05
4.500	20.000	0.000	5.825E-05
5.250	20.000	0.000	3.331E-04
6.000	20.000	0.000	2.032E-04

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1380 TO 1440 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	9.613E-08
3.100	20.000	0.000	3.314E-07
3.200	20.000	0.000	9.440E-07
3.750	20.000	0.000	1.688E-05
4.500	20.000	0.000	3.920E-05
5.250	20.000	0.000	1.671E-04
6.000	20.000	0.000	3.859E-04

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1440 TO 1500 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	3.717E-09
3.100	20.000	0.000	1.758E-08
3.200	20.000	0.000	6.977E-08
3.750	20.000	0.000	7.246E-06
4.500	20.000	0.000	2.825E-05
5.250	20.000	0.000	8.631E-05
6.000	20.000	0.000	3.978E-04

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1500 TO 1560 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	9.903E-11
3.100	20.000	0.000	5.995E-10
3.200	20.000	0.000	3.094E-09
3.750	20.000	0.000	1.631E-06

4.500	20.000	0.000	2.021E-05
5.250	20.000	0.000	5.203E-05
6.000	20.000	0.000	2.686E-04

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1560 TO 1620 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	2.053E-12
3.100	20.000	0.000	1.559E-11
3.200	20.000	0.000	9.886E-11
3.750	20.000	0.000	2.029E-07
4.500	20.000	0.000	1.350E-05
5.250	20.000	0.000	3.414E-05
6.000	20.000	0.000	1.480E-04

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1620 TO 1680 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	3.353E-13
3.200	20.000	0.000	2.594E-12
3.750	20.000	0.000	1.600E-08
4.500	20.000	0.000	6.083E-06
5.250	20.000	0.000	2.355E-05
6.000	20.000	0.000	7.920E-05

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1680 TO 1740 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	5.879E-14
3.750	20.000	0.000	9.122E-10
4.500	20.000	0.000	1.700E-06
5.250	20.000	0.000	1.706E-05
6.000	20.000	0.000	4.617E-05

60 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 1740 TO 1800 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	0.000E-01
1.500	20.000	0.000	0.000E-01
2.250	20.000	0.000	0.000E-01
3.000	20.000	0.000	0.000E-01
3.100	20.000	0.000	0.000E-01
3.200	20.000	0.000	0.000E-01
3.750	20.000	0.000	4.182E-11

4.500	20.000	0.000	3.059E-07
5.250	20.000	0.000	1.088E-05
6.000	20.000	0.000	2.966E-05

PUFF#	X (M)	Y (M)	Z (M)	TIME (MILLISEC)	TOTAL Q (GRAMS)	SY (M)	SZ (M)	TRAV. D. (KM)	KEYP
1	7374.399	20000.000	115.624	97260	78840.00	415.135	161.867	7.374	1
2	6658.709	20000.000	115.624	262512	7260.00	378.996	148.806	6.659	1
3	6125.274	20000.000	115.624	385681	3168.00	351.763	138.911	6.125	1
4	5586.865	20000.000	115.624	510000	1824.00	323.986	128.769	5.587	1
5	5197.084	20000.000	115.624	600000	456.00	303.703	121.329	5.197	1

1800 SEC AVG. CONCENTRATION AT RECEPTORS FOR SIMULATION PERIOD 0 TO 1800 SECONDS
DUE TO SOURCE NUMBER 1

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.915E-07
1.500	20.000	0.000	2.838E-05
2.250	20.000	0.000	7.044E-05
3.000	20.000	0.000	8.489E-05
3.100	20.000	0.000	8.499E-05
3.200	20.000	0.000	8.496E-05
3.750	20.000	0.000	8.149E-05
4.500	20.000	0.000	7.180E-05
5.250	20.000	0.000	6.465E-05
6.000	20.000	0.000	5.368E-05

* *

0.50 HR AVG. CONCENTRATION AT RECEPTORS FOR ALL SIMULATION PERIODS
DUE TO SOURCE NUMBER 1

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.750	20.000	0.000	1.915E-07
1.500	20.000	0.000	2.838E-05
2.250	20.000	0.000	7.044E-05
3.000	20.000	0.000	8.489E-05
3.100	20.000	0.000	8.499E-05
3.200	20.000	0.000	8.496E-05
3.750	20.000	0.000	8.149E-05
4.500	20.000	0.000	7.180E-05
5.250	20.000	0.000	6.465E-05
6.000	20.000	0.000	5.368E-05

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-40

ISC-ST MODEL RUN

FOR

1982 FOR INORGANIC WASTE TREATMENT SYSTEM STACK

AT EXHAUST GAS FLOW RATES OF 6,000 ACFM AND 1,000 ACFM

1 ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)

SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
RUN BEGAN ON 08-23-90 AT 15:55:49

1

*** IWT Case 1--1982 ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)		
WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	1
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	1
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE		
SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	2
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	1
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	0
NUMBER OF INPUT SOURCES	NSOURC =	1
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS =	10
NUMBER OF Y (THETA) GRID VALUES	NYPNTS =	36
NUMBER OF DISCRETE RECEPTORS	NXWYPT =	0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =	.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR =	10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET =	9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY =	.000000E+00
SURFACE STATION NO.	ISS =	12842

YEAR OF SURFACE DATA	ISY = 82
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 82
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 8613 WORDS

1

*** IWT Case 1--1982 ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

1

*** IWT Case 1--1982 ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

```
313.0,      407.0,      532.0,      720.0,      939.0,     1221.0,     1628.0,     2128.0,     2817.0,     6000.0,
```

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

```
360.0,       10.0,       20.0,       30.0,       40.0,       50.0,       60.0,       70.0,       80.0,       90.0,
100.0,      110.0,      120.0,      130.0,      140.0,      150.0,      160.0,      170.0,      180.0,      190.0,
200.0,      210.0,      220.0,      230.0,      240.0,      250.0,      260.0,      270.0,      280.0,      290.0,
300.0,      310.0,      320.0,      330.0,      340.0,      350.0,
```

1

*** IWT Case 1--1982 ***

*** SOURCE DATA ***

```
                   EMISSION RATE                                                 TEMP.    EXIT VEL.
                      TYPE=0,1                                                   TYPE=0    TYPE=0
        T W        (GRAMS/SEC)                                                 (DEG.K);  (M/SEC);             BLDG.     BLDG.     BLDG.
        Y A NUMBER    TYPE=2                              BASE                 VERT.DIM  HORZ.DIM DIAMETER  HEIGHT    LENGTH     WIDTH
 SOURCE P K  PART.  (GRAMS/SEC)      X          Y         ELEV.     HEIGHT      TYPE=1   TYPE=1,2  TYPE=0    TYPE=0    TYPE=0    TYPE=0
 NUMBER E E  CATS. *PER METER**2 (METERS)   (METERS)   (METERS)   (METERS)   (METERS)   (METERS)  (METERS)  (METERS)  (METERS)  (METERS)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

      1 0 0    0    .10000E+01       .0          .0          .0      30.48     293.15       9.70       .61       .00       .00       .00
 * CALM HOURS (=1) FOR DAY  1 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
 * CALM HOURS (=1) FOR DAY  6 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0
 * CALM HOURS (=1) FOR DAY  7 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0
 * CALM HOURS (=1) FOR DAY  8 *  1 0 1 0 0 0 1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY  9 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 10 *  0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 16 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 1
 * CALM HOURS (=1) FOR DAY 17 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
 * CALM HOURS (=1) FOR DAY 18 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1
 * CALM HOURS (=1) FOR DAY 19 *  1 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 1
 * CALM HOURS (=1) FOR DAY 20 *  0 0 0 1 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 21 *  0 0 0 0 1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0
 * CALM HOURS (=1) FOR DAY 22 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
 * CALM HOURS (=1) FOR DAY 25 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0
 * CALM HOURS (=1) FOR DAY 35 *  1 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 37 *  0 0 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 41 *  1 0 0 0 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 42 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 49 *  1 0 1 0 0 0 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 50 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1
 * CALM HOURS (=1) FOR DAY 51 *  1 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 54 *  0 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1
 * CALM HOURS (=1) FOR DAY 55 *  1 1 0 0 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1
 * CALM HOURS (=1) FOR DAY 56 *  1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 61 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1
 * CALM HOURS (=1) FOR DAY 62 *  0 0 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 63 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
 * CALM HOURS (=1) FOR DAY 65 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
 * CALM HOURS (=1) FOR DAY 70 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
 * CALM HOURS (=1) FOR DAY 71 *  0 1 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0
 * CALM HOURS (=1) FOR DAY 72 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 * CALM HOURS (=1) FOR DAY 73 *  0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0
 * CALM HOURS (=1) FOR DAY 74 *  0 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1
```

* CALM HOURS (=1) FOR DAY	75 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY	76 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	77 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	101 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	104 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	105 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	108 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	112 *	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	117 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	129 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	131 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	132 *	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	134 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	135 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	136 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	137 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	140 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	157 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	161 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	166 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	168 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	170 *	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	171 *	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	175 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	176 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	177 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	180 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	183 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	184 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	185 *	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	186 *	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	187 *	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	188 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY	189 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY	190 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	193 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY	197 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	198 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	199 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	200 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	201 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	203 *	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	204 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	207 *	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	208 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	209 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY	210 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	211 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	212 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY	213 *	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	214 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	216 *	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	221 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	222 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	223 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	224 *	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	225 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1
* CALM HOURS (=1) FOR DAY	226 *	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

* CALM HOURS (=1) FOR DAY 228 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 232 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 233 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 236 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 239 *	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 245 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 247 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 256 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 260 *	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 261 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 262 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 263 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 265 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 268 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 269 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 270 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 284 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 288 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 289 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1
* CALM HOURS (=1) FOR DAY 290 *	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 317 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 319 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 326 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 327 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 328 *	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 334 *	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 345 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 356 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 365 *	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

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'N'-DAY
365 DAYS
SGROUP# 1

*** IWT Case 1--1982 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS .96195 AND OCCURRED AT (532.0, 240.0) *

RANGE (METERS)

DIRECTION / (DEGREES) /	313.0	407.0	532.0	720.0	939.0	1221.0	1628.0	2128.0	2817.0
350.0 /	.36417	.37517	.35499	.30609	.25115	.19507	.14305	.10434	.07309
340.0 /	.40200	.42457	.41106	.36277	.30269	.23763	.17540	.12826	.08989
330.0 /	.44859	.48047	.47123	.41805	.34861	.27405	.20349	.15013	.10626
320.0 /	.52639	.58205	.59405	.55488	.48516	.39783	.30750	.23372	.16938
310.0 /	.55795	.62700	.64886	.61390	.54299	.45134	.35492	.27411	.20161
300.0 /	.52252	.59370	.62655	.61651	.57060	.49676	.40996	.32903	.24982
290.0 /	.43815	.49697	.52847	.52660	.49044	.42578	.34788	.27579	.20666
280.0 /	.49311	.58113	.63168	.62797	.57546	.49073	.39415	.30881	.22950
270.0 /	.59534	.68909	.72230	.68773	.61363	.51794	.41665	.32897	.24666
260.0 /	.62292	.71668	.74347	.69531	.60850	.50367	.39706	.30861	.22851
250.0 /	.69191	.81934	.87690	.84654	.75740	.63655	.50728	.39650	.29447
240.0 /	.70955	.87048	.96195	.95113	.85953	.72382	.57526	.44784	.33153
230.0 /	.54358	.65956	.72490	.71746	.65267	.55485	.44657	.35190	.26344
220.0 /	.39106	.47488	.51850	.50442	.44896	.37210	.29025	.22220	.16200
210.0 /	.24406	.27692	.28167	.25476	.21515	.17181	.13024	.09796	.07053
200.0 /	.19439	.21912	.22192	.20065	.17068	.13878	.10867	.08479	.06335
190.0 /	.17293	.20336	.21794	.21142	.18970	.15871	.12495	.09633	.07061
180.0 /	.16109	.19853	.22070	.21945	.20036	.17142	.13908	.11029	.08294
170.0 /	.12968	.15625	.17037	.16549	.14753	.12351	.09837	.07717	.05767
160.0 /	.11536	.14732	.16859	.16953	.15391	.13006	.10369	.08080	.05972
150.0 /	.13930	.18044	.20672	.20556	.18453	.15515	.12377	.09679	.07184
140.0 /	.18514	.22505	.24964	.24776	.22469	.19015	.15197	.11866	.08785
130.0 /	.25719	.28903	.29579	.27595	.24498	.20854	.17075	.13728	.10470
120.0 /	.31286	.33292	.32194	.28360	.23855	.19117	.14578	.11014	.07953
110.0 /	.38231	.39840	.37319	.31508	.25418	.19487	.14119	.10210	.07108
100.0 /	.47312	.48202	.43788	.35532	.27614	.20430	.14248	.09968	.06733
90.0 /	.52986	.51575	.44555	.34201	.25487	.18311	.12524	.08692	.05856
80.0 /	.58399	.54432	.45241	.33703	.24743	.17559	.11812	.08044	.05305
70.0 /	.63046	.57519	.46878	.34249	.24837	.17539	.11823	.08108	.05399
60.0 /	.60920	.56038	.46498	.34883	.25952	.18825	.13105	.09255	.06329
50.0 /	.56751	.53584	.45718	.35379	.27005	.20015	.14232	.10235	.07126
40.0 /	.52056	.51395	.45951	.36960	.28666	.21303	.15047	.10701	.07355
30.0 /	.45046	.45578	.42131	.35259	.28187	.21384	.15304	.10937	.07523
20.0 /	.38981	.39291	.35966	.29556	.23153	.17229	.12094	.08512	.05780
10.0 /	.36933	.36111	.32024	.25683	.19976	.14920	.10604	.07583	.05239
360.0 /	.37578	.37709	.34613	.28879	.23171	.17780	.12982	.09485	.06671

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'N'-DAY
365 DAYS
SGROUP# 1

*** IWT Case 1--1982 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS .96195 AND OCCURRED AT (532.0, 240.0) *

RANGE (METERS)

DIRECTION / (DEGREES) /	6000.0

350.0 /	.02654
340.0 /	.03227
330.0 /	.03923
320.0 /	.06488
310.0 /	.07980
300.0 /	.10465
290.0 /	.08355
280.0 /	.09182
270.0 /	.10059
260.0 /	.09120
250.0 /	.11780
240.0 /	.13231
230.0 /	.10746
220.0 /	.06248
210.0 /	.02677
200.0 /	.02616
190.0 /	.02749
180.0 /	.03411
170.0 /	.02362
160.0 /	.02349
150.0 /	.02863
140.0 /	.03477
130.0 /	.04451
120.0 /	.03019
110.0 /	.02541
100.0 /	.02260
90.0 /	.01987
80.0 /	.01689
70.0 /	.01778
60.0 /	.02199
50.0 /	.02586
40.0 /	.02583
30.0 /	.02609
20.0 /	.01974
10.0 /	.01870
360.0 /	.02451

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HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 56.62687 AND OCCURRED AT (720.0, 280.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	40.83182 (264, 9)	45.80767 (264, 9)	41.29024 (264, 9)	32.29056 (264, 9)	29.98959 (117, 7)
340.0 /	38.50624 (1,10)	47.61160 (1,10)	45.29985 (1,10)	36.16096 (209,10)	36.23387 (209,10)
330.0 /	38.90149 (94,15)	35.88213 (188, 8)	31.47358 (188, 8)	32.51314 (231, 1)	30.97568 (231, 1)
320.0 /	39.48970 (140,10)	45.89272 (175, 8)	43.60343 (175, 8)	33.72096 (175, 8)	27.21381 (154, 1)
310.0 /	46.74921 (130,15)	41.40117 (344,14)	37.40610 (344,14)	32.51313 (101, 8)	30.97568 (101, 8)
300.0 /	39.48971 (222,12)	47.61162 (179, 8)	45.29988 (179, 8)	35.09806 (179, 8)	30.97568 (64, 2)

290.0 /	47.45949 (352,16)	40.74723 (352,16)	35.55165 (241, 9)	36.16093 (1, 1)	36.23384 (1, 1)
280.0 /	35.00600 (62,12)	39.42292 (18,10)	45.57774 (307, 7)	56.62687 (307, 7)	54.02773 (307, 7)
270.0 /	37.15656 (200,19)	45.89273 (200,19)	43.60344 (200,19)	33.72094 (200,19)	30.97568 (259, 9)
260.0 /	44.00556 (175, 9)	47.61160 (19,10)	45.29985 (19,10)	35.09805 (19,10)	27.21368 (16, 9)
250.0 /	39.76263 (175, 9)	39.60003 (77, 8)	37.41427 (77, 8)	32.51314 (141, 7)	30.97568 (141, 7)
240.0 /	45.58728 (365,11)	43.16088 (207, 9)	40.91229 (207, 9)	36.16097 (55, 9)	36.23389 (55, 9)
230.0 /	46.82056 (264,12)	40.95448 (264,12)	35.55172 (35,16)	36.16097 (64,19)	36.23390 (64,19)
220.0 /	47.45951 (259,17)	43.16094 (197,17)	40.91235 (197,17)	31.54178 (197,17)	29.98956 (150,10)
210.0 /	47.45951 (206,18)	40.74724 (206,18)	31.07645 (256,16)	28.72257 (42, 8)	27.21369 (42, 8)
200.0 /	45.58729 (203, 9)	39.42295 (104, 9)	35.55171 (104, 9)	26.51531 (104, 9)	23.14113 (225,20)
190.0 /	39.68760 (355,12)	37.07890 (77, 9)	33.35902 (77, 9)	28.72257 (77, 5)	27.96009 (42, 5)
180.0 /	39.48970 (203,16)	34.02317 (259,10)	30.50870 (259,10)	36.16095 (62,23)	36.23387 (62,23)
170.0 /	35.79234 (85, 8)	40.89776 (85, 8)	36.93387 (85, 8)	28.21465 (42, 7)	27.96011 (42, 7)
160.0 /	39.48970 (208,12)	43.60949 (264,11)	43.37383 (264,11)	37.81103 (264,11)	31.23777 (264,11)
150.0 /	37.93913 (365,13)	31.17521 (365,13)	26.76131 (265,19)	36.16093 (265,19)	36.23385 (265,19)
140.0 /	35.00840 (138,18)	43.16094 (138,18)	40.91235 (138,18)	31.54178 (138,18)	29.98959 (183, 7)
130.0 /	44.00555 (148,10)	45.89269 (187, 8)	43.60340 (187, 8)	33.72092 (187, 8)	27.21375 (321,17)
120.0 /	44.00557 (179, 9)	37.68493 (179, 9)	31.07647 (171, 9)	22.75263 (171, 9)	24.08168 (318,18)
110.0 /	39.49049 (264,13)	32.54716 (264,13)	28.94629 (259,18)	40.12322 (37, 8)	44.78562 (37, 8)
100.0 /	38.50625 (265,18)	47.61160 (265,18)	45.29985 (265,18)	36.16098 (60, 1)	36.23389 (60, 1)
90.0 /	45.58728 (18,11)	40.89777 (209,18)	36.93389 (209,18)	31.52154 (254,18)	29.98958 (254,18)
80.0 /	37.21189 (18,11)	45.89274 (229,18)	43.60345 (229,18)	33.72095 (229,18)	32.88035 (150, 9)
70.0 /	35.79236 (8,13)	40.89778 (8,13)	36.93389 (8,13)	27.59774 (8,13)	23.14120 (307,13)
60.0 /	36.62890 (56,12)	41.40117 (25,16)	37.40610 (25,16)	32.51314 (307,12)	30.97568 (307,12)
50.0 /	38.96663 (64,15)	48.19832 (64,15)	45.87944 (64,15)	35.56913 (64,15)	30.96850 (174, 6)
40.0 /	38.50624 (42,12)	47.61159 (42,12)	45.29984 (42,12)	35.09804 (42,12)	29.98957 (227, 8)
30.0 /	47.69848 (270,14)	40.95942 (270,14)	30.50865 (267,16)	31.52154 (251,16)	29.98957 (251,16)
20.0 /	38.50624 (8,11)	47.61160 (8,11)	45.30257 (8,11)	35.22770 (8,11)	30.97568 (63,11)
10.0 /	39.76260 (238,17)	33.93426 (238,17)	40.23577 (4, 8)	48.23151 (4, 8)	45.10879 (4, 8)
360.0 /	46.74923 (223,11)	45.89272 (247,10)	43.60344 (247,10)	33.72094 (247,10)	30.97568 (4,16)

1

HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 56.62687 AND OCCURRED AT (720.0, 280.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	24.80125 (117, 7)	18.68566 (117, 7)	16.67719 (63,23)	15.65679 (63,23)	8.94614 (63,23)
340.0 /	30.87746 (209,10)	23.77983 (209,10)	19.95408 (117, 6)	18.37663 (73,24)	10.77624 (73,24)
330.0 /	25.65522 (231, 1)	20.92067 (345, 6)	19.41336 (161, 3)	18.37663 (161, 3)	10.77624 (161, 3)
320.0 /	23.38828 (33,22)	20.92067 (33,22)	18.61649 (49, 6)	15.65682 (263, 7)	8.94617 (263, 7)
310.0 /	26.13379 (255,21)	24.13834 (255,21)	20.27235 (255,21)	15.76542 (255,21)	9.93989 (21, 4)
300.0 /	25.65522 (64, 2)	20.92067 (197, 6)	19.41336 (148, 1)	18.37663 (148, 1)	10.77624 (148, 1)
290.0 /	30.87741 (1, 1)	24.13835 (224, 7)	20.27236 (224, 7)	15.76543 (224, 7)	9.74940 (22, 3)
280.0 /	45.10330 (307, 7)	35.11176 (307, 7)	27.40912 (307, 7)	21.09548 (307, 7)	10.77624 (162,24)
270.0 /	25.65522 (259, 9)	20.92067 (259,20)	19.41336 (76, 2)	18.37663 (76, 2)	10.77624 (76, 2)
260.0 /	23.38828 (259, 8)	20.92067 (259, 8)	19.41336 (222, 5)	18.37663 (222, 5)	10.77624 (222, 5)
250.0 /	25.65522 (141, 7)	19.62489 (345, 1)	16.51900 (71, 3)	16.28879 (71, 3)	10.14578 (71, 3)
240.0 /	30.87743 (55, 9)	23.77801 (55, 9)	19.41336 (22,21)	18.37663 (22,21)	10.77624 (22,21)
230.0 /	30.87744 (64,19)	23.77802 (64,19)	19.41336 (1,21)	18.37663 (1,21)	10.77624 (1,21)
220.0 /	26.13376 (197,22)	24.13832 (197,22)	20.27233 (197,22)	15.76540 (197,22)	8.39174 (1,23)

210.0 /	27.77008 (182, 6)	25.73192 (182, 6)	21.68048 (182, 6)	16.92234 (182, 6)	8.39174 (73, 1)
200.0 /	23.38828 (111, 1)	20.92067 (111, 1)	17.22330 (111, 1)	14.91479 (71,24)	8.84391 (10, 3)
190.0 /	23.54225 (42, 5)	17.86959 (42, 5)	16.67711 (222,23)	15.65670 (222,23)	8.94609 (222,23)
180.0 /	30.87741 (62,23)	24.13825 (229,20)	20.27228 (229,20)	18.37663 (56,21)	10.77624 (56,21)
170.0 /	23.54226 (42, 7)	17.86961 (42, 7)	13.35922 (37,21)	11.97739 (353, 5)	8.67970 (353, 5)
160.0 /	25.65522 (8,18)	19.62485 (202,20)	16.10454 (202,20)	12.70704 (92,21)	6.96652 (92,21)
150.0 /	30.87741 (265,19)	23.77799 (265,19)	17.70355 (265,19)	15.65667 (174,23)	8.94607 (174,23)
140.0 /	24.80126 (183, 7)	18.68566 (183, 7)	16.67721 (118, 2)	15.65680 (118, 2)	8.94615 (118, 2)
130.0 /	22.40450 (321,17)	17.40401 (169,22)	19.41336 (169,22)	18.37663 (169,22)	10.77624 (169,22)
120.0 /	26.13376 (318,18)	24.13831 (318,18)	20.27233 (318,18)	15.76540 (318,18)	8.39174 (112, 2)
110.0 /	42.13626 (37, 8)	35.76038 (37, 8)	29.07141 (37, 8)	22.75011 (37, 8)	11.46490 (37, 8)
100.0 /	30.87744 (60, 1)	23.77802 (60, 1)	17.70358 (60, 1)	12.74598 (239,19)	6.96655 (165, 3)
90.0 /	24.80125 (254,18)	18.68564 (254,18)	19.41336 (213, 2)	18.37663 (213, 2)	10.77624 (213, 2)
80.0 /	27.89382 (150, 9)	21.36456 (150, 9)	16.57084 (235, 8)	12.74597 (235, 8)	6.96655 (214, 2)
70.0 /	18.90898 (307,13)	14.04247 (307,13)	13.92419 (235, 1)	12.70711 (235, 1)	6.96657 (235, 1)
60.0 /	25.65522 (307,12)	19.36385 (307,12)	16.67706 (165, 1)	15.65665 (165, 1)	8.94605 (165, 1)
50.0 /	27.56148 (174, 6)	22.35581 (174, 6)	17.70564 (174, 6)	15.65673 (185, 2)	8.94611 (185, 2)
40.0 /	24.80124 (227, 8)	18.68564 (227, 8)	16.67715 (81, 5)	15.65674 (81, 5)	8.94611 (81, 5)
30.0 /	24.80124 (251,16)	20.92067 (64, 1)	17.22330 (64, 1)	14.91479 (316,20)	8.39174 (316,20)
20.0 /	25.65521 (63,11)	19.36384 (63,11)	16.67709 (333,19)	15.65669 (333,19)	8.94608 (333,19)
10.0 /	37.30542 (4, 8)	28.92973 (4, 8)	22.56601 (4, 8)	17.36651 (4, 8)	8.94608 (59, 2)
360.0 /	25.65522 (4,16)	19.36384 (4,16)	16.67718 (59, 1)	15.65678 (59, 1)	8.94614 (59, 1)

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2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 46.74922 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	37.93914 (205, 9)	35.44621 (6,13)	31.07645 (6,13)	31.52155 (117, 7)	29.98956 (240, 8)
340.0 /	35.79235 (16,15)	40.89777 (16,15)	36.93388 (16,15)	35.09804 (1,10)	30.97568 (239, 8)
330.0 /	33.77656 (153,12)	34.02306 (148, 8)	30.50860 (148, 8)	31.52156 (110, 7)	29.98960 (110, 7)
320.0 /	38.90149 (196,16)	41.40117 (212, 8)	37.40610 (212, 8)	28.72269 (154, 1)	27.21381 (319, 2)
310.0 /	39.48971 (19,12)	40.11685 (130,15)	35.55174 (20,11)	31.52151 (16,11)	29.98955 (16,11)
300.0 /	38.50626 (179, 8)	41.40117 (356,15)	37.40610 (356,15)	32.51314 (64, 2)	29.98961 (63, 8)
290.0 /	39.68760 (50,11)	39.42290 (241, 9)	29.90543 (352,16)	32.51314 (75, 8)	30.97568 (75, 8)
280.0 /	35.00600 (259,14)	35.88213 (352,15)	35.55169 (18,10)	31.52157 (206, 7)	29.98961 (206, 7)
270.0 /	36.62888 (327,11)	39.60000 (219,16)	37.41424 (219,16)	32.51314 (259, 9)	29.98956 (71,10)
260.0 /	38.50624 (19,10)	40.89777 (50,10)	36.93389 (50,10)	28.72255 (16, 9)	27.21368 (143,19)
250.0 /	38.90148 (262,11)	37.07885 (344,11)	33.35898 (344,11)	31.52154 (328,10)	29.98958 (328,10)
240.0 /	39.68760 (261,10)	40.89777 (328,11)	36.93388 (328,11)	32.51314 (63, 1)	32.17232 (84, 7)
230.0 /	45.58728 (72,11)	39.42296 (35,16)	33.35898 (51,11)	28.87639 (305, 7)	28.06420 (305, 7)
220.0 /	39.76265 (224,10)	40.74724 (259,17)	35.55171 (321,15)	31.52152 (150,10)	25.45289 (208,17)
210.0 /	44.00555 (224,10)	37.68491 (224,10)	30.50863 (82, 9)	27.55690 (247, 9)	25.52170 (182, 6)
200.0 /	38.90146 (118, 9)	39.08632 (203, 9)	30.50863 (327,10)	24.59358 (225,20)	22.52157 (111, 1)
190.0 /	37.21187 (203, 9)	32.66433 (355,12)	23.60772 (259,10)	28.21463 (42, 5)	27.21370 (77, 5)
180.0 /	33.60861 (77,10)	32.49566 (203,16)	26.76133 (62,23)	31.52151 (42,11)	29.98955 (42,11)
170.0 /	33.60861 (49,11)	35.44621 (200,16)	31.07645 (200,16)	27.59772 (85, 8)	23.09706 (17,17)
160.0 /	35.03135 (264,11)	32.49566 (208,12)	26.25757 (8,18)	32.51314 (8,18)	30.97568 (8,18)
150.0 /	33.77656 (209,12)	27.14229 (209,12)	25.90200 (264,11)	28.72260 (84, 8)	27.21373 (84, 8)
140.0 /	35.00597 (132,13)	35.44621 (255,16)	31.07645 (255,16)	31.52155 (183, 7)	29.98956 (60, 2)

130.0 /	39.76262 (179, 9)	37.68491 (148,10)	29.91409 (108, 9)	28.72261 (321,17)	25.45289 (99,20)
120.0 /	39.76264 (148,10)	35.44622 (171, 9)	27.56607 (179, 9)	22.35374 (185,19)	21.25044 (234,21)
110.0 /	33.77657 (239,16)	30.92659 (259,18)	27.50522 (37, 8)	28.72264 (197,16)	27.21377 (197,16)
100.0 /	34.53996 (238,10)	39.60003 (259,18)	37.41426 (259,18)	35.09805 (265,18)	29.98957 (8,16)
90.0 /	37.93911 (269,13)	39.08632 (18,11)	28.63564 (18,11)	28.72263 (187,10)	27.21376 (187,10)
80.0 /	37.15656 (229,18)	31.68595 (18,11)	24.48921 (150, 9)	32.95066 (150, 9)	27.96006 (1, 9)
70.0 /	34.53995 (270,17)	39.42295 (270,17)	35.55171 (270,17)	26.51531 (270,17)	19.94852 (4,14)
60.0 /	36.62890 (227,10)	40.89776 (208, 8)	36.93388 (208, 8)	31.52150 (185, 8)	29.98954 (185, 8)
50.0 /	35.01529 (184,12)	35.88213 (164, 8)	31.47358 (164, 8)	31.52153 (215, 7)	29.98956 (215, 7)
40.0 /	36.62890 (208,10)	41.40117 (233,10)	37.40610 (233,10)	31.52153 (227, 8)	27.21370 (278, 1)
30.0 /	39.68760 (140,15)	34.02311 (267,16)	30.06780 (270,14)	28.72260 (6,17)	27.21373 (6,17)
20.0 /	36.21953 (224, 9)	41.40117 (224, 9)	37.40610 (224, 9)	32.51314 (63,11)	27.21372 (246, 9)
10.0 /	39.76260 (239,10)	33.93426 (239,10)	29.73541 (209, 8)	31.52153 (319, 4)	29.98957 (319, 4)
360.0 /	46.74922 (195,12)	43.16090 (64,18)	40.91230 (64,18)	32.51314 (4,16)	26.28977 (116, 8)

1

2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 46.74922 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	24.80123 (240, 8)	18.68563 (240, 8)	14.28728 (166,21)	12.52846 (117, 4)	6.88421 (117, 4)
340.0 /	25.65522 (239, 8)	23.61757 (117, 6)	19.41336 (73,24)	15.58421 (117, 6)	6.68770 (117, 6)
330.0 /	24.80127 (110, 7)	19.62491 (205, 2)	17.22330 (345, 6)	14.91480 (161, 2)	8.39174 (161, 2)
320.0 /	23.38828 (238,23)	20.92067 (238,23)	17.22330 (33,22)	15.65669 (176,23)	8.94608 (176,23)
310.0 /	25.65552 (101, 8)	19.62484 (143, 2)	16.67723 (156, 2)	15.65682 (156, 2)	8.94617 (156, 2)
300.0 /	24.80127 (63, 8)	20.92067 (279, 1)	19.41336 (190,23)	18.37663 (190,23)	10.77624 (190,23)
290.0 /	26.13380 (224, 7)	24.13824 (171, 6)	20.27226 (171, 6)	15.76535 (171, 6)	8.39174 (135, 5)
280.0 /	24.80128 (206, 7)	19.92281 (252, 6)	19.41336 (162,24)	18.37663 (162,24)	10.40962 (307, 7)
270.0 /	24.80124 (71,10)	20.92067 (262, 3)	17.48947 (299, 8)	16.63452 (7, 3)	10.25322 (7, 3)
260.0 /	23.38828 (328, 9)	20.92067 (328, 9)	17.22330 (259, 8)	15.65674 (225, 5)	8.94611 (225, 5)
250.0 /	24.80125 (328,10)	19.62488 (109,24)	16.20915 (141, 1)	14.91480 (141, 1)	9.02090 (356, 5)
240.0 /	28.89395 (84, 7)	23.72946 (84, 7)	19.41336 (344,21)	18.37663 (344,21)	10.77624 (344,21)
230.0 /	24.66750 (305, 7)	20.92067 (109,23)	19.41336 (208, 2)	18.37663 (208, 2)	10.77624 (208, 2)
220.0 /	24.80123 (150,10)	19.62490 (108,22)	16.20915 (1,23)	14.91480 (1,23)	6.96654 (282,21)
210.0 /	26.13377 (247, 8)	24.13831 (247, 8)	20.27233 (247, 8)	15.76541 (247, 8)	8.39174 (256, 5)
200.0 /	18.90892 (225,20)	15.13545 (71,24)	16.20915 (71,24)	13.56229 (20,21)	8.39174 (71,24)
190.0 /	22.40447 (77, 5)	16.78896 (77, 5)	13.92411 (365, 4)	12.70704 (365, 4)	7.33306 (355,20)
180.0 /	26.13371 (229,20)	23.77800 (62,23)	19.41336 (56,21)	18.37663 (258,24)	10.77624 (258,24)
170.0 /	18.87723 (37,21)	16.49535 (37,21)	13.16387 (214, 6)	11.23478 (25,22)	7.28341 (25,22)
160.0 /	24.82292 (264,11)	19.36384 (8,18)	14.80902 (264,11)	12.52846 (240,21)	6.88421 (240,21)
150.0 /	22.40449 (84, 8)	16.78898 (84, 8)	16.67707 (174,23)	12.70704 (236,22)	6.96653 (236,22)
140.0 /	24.80123 (60, 2)	18.68563 (60, 2)	14.28728 (212, 5)	12.52846 (161,24)	6.88421 (161,24)
130.0 /	20.69525 (99,20)	17.40401 (246,22)	19.41336 (246,22)	18.37663 (246,22)	10.77624 (246,22)
120.0 /	22.00986 (234,21)	19.62490 (234,21)	16.20915 (112, 2)	14.91479 (112, 2)	8.39174 (183, 5)
110.0 /	22.40453 (197,16)	20.00947 (16,18)	17.68505 (16,18)	14.26562 (16,18)	8.01605 (118, 3)
100.0 /	24.80124 (8,16)	19.92284 (239,19)	16.57085 (239,19)	12.70708 (165, 3)	5.25015 (239,19)
90.0 /	22.40451 (187,10)	17.40401 (213, 2)	16.98893 (50,20)	16.63452 (50,20)	10.25322 (50,20)
80.0 /	23.54222 (1, 9)	19.92283 (235, 8)	15.82023 (150, 9)	12.70707 (214, 2)	5.71504 (7,19)
70.0 /	15.96630 (4,14)	13.61428 (19,18)	11.88868 (213, 1)	10.92989 (19,19)	6.43343 (19,19)
60.0 /	24.80121 (185, 8)	18.68562 (185, 8)	14.23672 (307,12)	12.70705 (172,22)	6.96654 (172,22)

50.0 /	24.80124 (215, 7)	20.92067 (174, 5)	17.22330 (174, 5)	15.65670 (175,21)	8.94609 (175,21)
40.0 /	22.40446 (278, 1)	16.78896 (278, 1)	14.31966 (288,21)	13.60134 (288,21)	8.01605 (288,21)
30.0 /	23.38828 (64, 1)	20.92067 (236, 8)	17.22330 (236, 8)	13.22419 (64, 1)	5.81463 (286,23)
20.0 /	22.40468 (264,16)	16.79440 (264,16)	14.23672 (63,11)	10.67388 (63,21)	5.71503 (63,21)
10.0 /	24.80124 (319, 4)	20.92067 (59, 5)	17.22330 (59, 5)	15.65670 (59, 2)	8.56944 (4, 8)
360.0 /	21.40783 (116, 8)	16.49539 (233, 8)	16.67712 (265, 5)	15.65672 (265, 5)	8.94610 (265, 5)

1

HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.66575 AND OCCURRED AT (313.0, 320.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	23.18773 (153, 5)	19.50742 (153, 5)	14.31184 (153, 5)	12.68881 (231, 2)	11.16764 (231, 2)
340.0 /	20.21003 (220, 4)	17.30664 (153, 4)	15.09995 (1, 4)	15.70115C(76, 3)	17.08001C(76, 3)
330.0 /	26.04131 (221, 4)	22.37569 (221, 4)	17.64083 (160, 3)	15.23255 (363, 3)	12.86546 (350, 1)
320.0 /	27.66575 (64, 4)	23.53670 (64, 4)	17.37366 (64, 4)	14.11033 (80, 3)	12.78371 (80, 3)
310.0 /	23.72296 (20, 4)	23.16131 (20, 4)	18.97468 (20, 4)	13.56145 (205, 3)	11.29873 (361, 6)
300.0 /	21.53203 (134, 4)	19.66203 (134, 4)	15.34953 (134, 4)	16.17057 (155, 2)	16.13197 (155, 2)
290.0 /	20.86056 (137, 4)	16.62320 (137, 4)	15.11038 (135, 3)	16.67493 (1, 1)	18.82073 (1, 1)
280.0 /	23.52303 (39, 5)	24.03699 (137, 3)	23.95747 (137, 3)	21.17699 (137, 3)	18.00924 (307, 3)
270.0 /	24.13575 (158, 4)	18.94229 (200, 7)	20.16250 (200, 7)	17.55349 (200, 7)	13.72507 (200, 7)
260.0 /	21.67771 (12, 4)	20.41747 (12, 4)	16.30988 (12, 4)	15.05350 (50, 3)	13.47970 (50, 3)
250.0 /	25.72576 (35, 5)	22.31335 (35, 5)	19.69703 (122, 4)	17.03382 (114, 1)	15.01657 (114, 1)
240.0 /	21.10777 (262, 4)	19.62582 (123, 3)	18.55665 (274, 3)	18.80396 (8, 8)	17.97413 (43, 2)
230.0 /	27.24500 (260, 4)	23.59539 (260, 4)	19.20073 (35, 6)	19.79206 (343, 4)	17.54626 (343, 4)
220.0 /	23.84236 (256, 4)	20.55965 (256, 4)	15.39362 (256, 4)	14.00676 (251, 6)	12.82878 (158, 1)
210.0 /	16.47857 (141, 4)	13.91235 (206, 6)	12.39392 (38, 5)	14.64645C(247, 3)	16.51152C(247, 3)
200.0 /	16.19177 (288, 3)	17.75703 (288, 3)	16.41296 (288, 3)	12.98435 (288, 3)	9.64053 (288, 3)
190.0 /	18.75775 (44, 5)	17.08314 (44, 5)	13.49456 (77, 2)	17.13919 (77, 2)	16.49549 (77, 2)
180.0 /	18.51944 (77, 4)	16.77402C(355, 4)	14.47918 (38, 1)	16.18260 (38, 1)	14.43163 (38, 1)
170.0 /	23.68034 (77, 4)	18.60755 (77, 4)	12.91181 (85, 3)	10.81682 (32, 1)	9.50859 (32, 1)
160.0 /	16.13594 (77, 4)	14.53650 (264, 4)	16.52823 (8, 6)	20.41191 (8, 6)	19.39647 (8, 6)
150.0 /	12.64638 (365, 5)	10.99933 (255, 6)	15.83204 (84, 3)	19.04878 (84, 3)	17.83450 (84, 3)
140.0 /	18.63653 (283, 4)	17.18424 (283, 4)	16.13367 (183, 3)	16.01156 (183, 3)	13.78135 (183, 3)
130.0 /	19.60279 (240, 5)	15.29756 (187, 3)	14.94192 (66, 7)	16.16978 (153, 8)	14.52955 (153, 8)
120.0 /	18.18941 (240, 6)	16.93035 (240, 6)	14.35779 (204, 6)	14.03094 (234, 7)	14.88546 (234, 7)
110.0 /	17.68568 (130, 6)	16.39023 (130, 6)	15.72752 (36, 6)	14.98147 (36, 6)	14.92854C(37, 3)
100.0 /	19.22676 (135, 5)	18.02002 (238, 4)	15.84594 (238, 4)	13.14465 (110, 6)	12.07796 (60, 1)
90.0 /	24.92204 (225, 5)	19.63636 (225, 5)	15.54626 (254, 6)	15.52701 (254, 6)	13.44220 (254, 6)
80.0 /	24.48686 (206, 4)	25.53256 (229, 6)	22.41724 (229, 6)	16.41955 (229, 6)	11.41754 (229, 6)
70.0 /	25.70843 (20, 5)	24.50824 (328, 5)	20.69239 (328, 5)	17.06939 (8, 5)	13.71560 (8, 5)
60.0 /	26.22700 (246, 4)	23.91933 (246, 4)	18.68956 (246, 4)	14.07938 (151, 6)	11.60320 (151, 6)
50.0 /	20.74658 (65, 4)	19.97523 (56, 5)	18.19745 (64, 5)	15.46203 (174, 2)	17.83002 (174, 2)
40.0 /	24.07590 (18, 5)	21.51448 (18, 5)	16.54902 (18, 5)	14.67531 (93, 7)	12.73065 (93, 7)
30.0 /	19.63171 (1, 5)	21.07834 (1, 5)	18.26418 (1, 5)	13.57215 (18, 6)	14.58343 (18, 6)
20.0 /	24.56551 (194, 4)	18.14372 (194, 4)	15.55141 (264, 6)	19.14839 (264, 6)	18.14248 (264, 6)
10.0 /	23.96326 (195, 4)	19.95329 (239, 4)	14.66343 (239, 4)	16.07717 (4, 3)	15.03626 (4, 3)
360.0 /	26.68531 (239, 4)	22.76808 (239, 4)	21.45905 (64, 6)	19.69956 (64, 6)	16.01014 (64, 6)

1

HIGH
3-HR

SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.66575 AND OCCURRED AT (313.0, 320.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	11.55135 (316, 8)	11.12787 (316, 8)	9.75986 (316, 8)	7.86827 (316, 8)	3.59327 (316, 8)
340.0 /	15.60371C(76, 3)	12.77018C(76, 3)	9.93926C(76, 3)	7.30540C(76, 3)	3.59208C(73, 8)
330.0 /	10.18458 (350, 1)	11.34154 (161, 1)	12.34621 (161, 1)	11.47770 (161, 1)	6.53059 (161, 1)
320.0 /	10.67504 (83, 8)	9.29421 (83, 8)	9.08212C(176, 8)	8.44545C(176, 8)	4.68750C(176, 8)
310.0 /	10.60099 (361, 6)	8.85666 (361, 6)	8.99694 (156, 1)	8.27198 (156, 1)	4.59111 (156, 1)
300.0 /	14.18895 (155, 2)	11.58679 (255, 8)	10.77125 (255, 8)	9.07830 (255, 8)	4.50604 (255, 8)
290.0 /	17.55176 (1, 1)	14.56688 (1, 1)	11.42475 (1, 1)	9.07827C(161, 2)	4.50603C(161, 2)
280.0 /	15.03443 (307, 3)	11.70392 (307, 3)	9.16354 (221, 8)	7.83752 (194, 2)	4.31015 (194, 2)
270.0 /	12.73010 (217, 7)	10.98918 (217, 7)	8.95761 (217, 7)	7.77900 (7, 1)	4.64467 (7, 1)
260.0 /	10.74102 (50, 3)	8.46327 (329, 3)	6.90415C(221, 2)	6.17655C(221, 2)	3.67356 (15, 2)
250.0 /	14.67323 (252, 1)	13.08325 (252, 1)	10.73637 (252, 1)	8.21337 (252, 1)	3.64146 (15, 7)
240.0 /	15.79911 (43, 2)	12.67684 (43, 2)	9.78298 (43, 2)	7.15065 (43, 2)	3.59208C(22, 7)
230.0 /	13.93069 (343, 4)	14.23275 (139, 2)	14.25876 (139, 2)	12.59081 (139, 2)	6.60509 (139, 2)
220.0 /	12.40544 (158, 1)	10.49841 (158, 1)	8.31937 (158, 1)	6.20212 (158, 1)	2.89778 (300, 1)
210.0 /	15.60966C(247, 3)	13.17988C(247, 3)	10.49476C(247, 3)	7.85482C(247, 3)	4.12533 (73, 1)
200.0 /	7.79609 (111, 1)	6.97356 (111, 1)	5.74110 (111, 1)	5.43775 (299, 7)	3.21357 (299, 7)
190.0 /	13.65381 (77, 2)	10.23244 (77, 2)	7.44358 (77, 2)	5.21890 (222, 8)	2.98203 (222, 8)
180.0 /	11.40224 (38, 1)	8.24048 (38, 1)	6.75743C(229, 7)	6.12554 (56, 7)	3.59208 (56, 7)
170.0 /	7.84742 (42, 3)	5.95654 (42, 3)	4.56781 (37, 7)	3.99246 (353, 2)	2.89323 (353, 2)
160.0 /	16.01990 (8, 6)	12.05094 (8, 6)	8.83035 (8, 6)	6.16849 (8, 6)	2.32217 (92, 7)
150.0 /	14.60411 (84, 3)	10.91643 (84, 3)	7.96477 (84, 3)	6.17650C(224, 8)	3.23308C(224, 8)
140.0 /	12.04144 (60, 1)	9.82750 (60, 1)	7.73752 (118, 1)	7.10629 (118, 1)	3.90227 (118, 1)
130.0 /	11.52467 (153, 8)	10.05824 (156, 8)	10.53867 (156, 8)	9.51523 (156, 8)	5.13102 (156, 8)
120.0 /	13.97072 (318, 6)	11.90420 (318, 6)	9.52556 (318, 6)	7.14917 (318, 6)	2.87320 (318, 6)
110.0 /	14.04542C(37, 3)	11.92013C(37, 3)	9.69047C(37, 3)	7.58337C(37, 3)	3.82163C(37, 3)
100.0 /	10.48485 (185, 3)	8.48912 (185, 3)	6.59007 (185, 3)	4.84782 (185, 3)	2.32218 (165, 1)
90.0 /	10.54149 (254, 6)	7.62867 (254, 6)	6.47112C(213, 1)	6.12554C(213, 1)	3.59208C(213, 1)
80.0 /	9.29794 (150, 3)	7.12152 (150, 3)	5.52361C(235, 3)	4.24866C(235, 3)	2.32218 (214, 1)
70.0 /	10.13987 (8, 5)	6.96280 (8, 5)	4.86395 (8, 5)	4.24831C(235, 1)	2.32490C(235, 1)
60.0 /	8.78767 (151, 6)	6.45462 (307, 4)	6.28700 (233, 8)	5.68174 (233, 8)	2.99336 (233, 8)
50.0 /	16.98325 (174, 2)	14.42549 (174, 2)	11.64298 (174, 2)	8.96412 (174, 2)	4.10417 (174, 2)
40.0 /	11.26127 (58, 7)	9.14200 (58, 7)	7.05499 (58, 7)	5.61591 (151, 7)	2.98204 (81, 2)
30.0 /	13.32621 (18, 6)	10.94115 (18, 6)	8.54378 (18, 6)	6.30169 (18, 6)	2.79725 (316, 7)
20.0 /	14.93645 (264, 6)	11.19627 (264, 6)	8.19708 (264, 6)	5.79043 (264, 6)	2.99450 (63, 7)
10.0 /	12.43514 (4, 3)	9.64324 (4, 3)	7.52200 (4, 3)	5.78884 (4, 3)	2.98203 (59, 1)
360.0 /	11.99579 (64, 6)	8.32613 (64, 6)	6.12470 (59, 1)	5.68794 (59, 1)	3.16345 (59, 1)

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2ND HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.93682 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	19.71144 (160, 4)	15.39764 (160, 4)	13.76365 (264, 3)	12.63212 (308, 2)	11.15728 (308, 2)
340.0 /	18.60645 (104, 4)	16.84271 (220, 4)	14.15813 (153, 4)	13.08573 (308, 1)	12.07796 (209, 4)
330.0 /	19.69990 (160, 3)	19.85192 (160, 3)	16.70448 (221, 4)	14.54926 (350, 1)	12.83432 (363, 3)
320.0 /	18.15705 (218, 4)	17.80177 (22, 5)	15.04586 (204, 3)	13.93279 (128, 3)	12.39450 (128, 3)
310.0 /	23.55676 (19, 4)	19.15953 (19, 4)	15.94222 (155, 5)	13.20806 (20, 4)	11.04980 (196, 7)
300.0 /	17.30111 (138, 4)	15.87054 (179, 3)	15.09996 (179, 3)	15.88007 (361, 4)	13.84928 (361, 4)
290.0 /	16.95655 (197, 4)	13.94744 (135, 3)	14.09798 (64, 2)	16.58657 (64, 2)	15.52505 (189, 7)
280.0 /	21.82170 (137, 3)	19.99545 (39, 5)	15.24925 (330, 4)	18.87562 (307, 3)	17.23232 (194, 7)
270.0 /	21.51993 (133, 5)	18.59413 (244, 4)	16.95127 (119, 5)	15.90008 (119, 5)	13.59168 (277, 2)
260.0 /	21.57678 (61, 5)	17.46858 (67, 6)	15.09995 (19, 4)	14.82528 (122, 6)	12.93590 (122, 6)
250.0 /	24.29130 (267, 4)	21.38935 (122, 4)	16.70424 (35, 5)	15.26351 (122, 4)	14.16695 (252, 1)
240.0 /	20.75900 (241, 5)	19.01042 (274, 3)	17.28986 (266, 6)	17.94734 (43, 2)	16.93274 (8, 8)
230.0 /	24.59437 (72, 4)	20.53156 (72, 4)	18.10529 (343, 4)	18.24214 (342, 1)	16.46037 (342, 1)
220.0 /	22.79748 (72, 4)	18.88961 (72, 4)	14.48115C(112, 3)	13.94008 (38, 4)	12.67956 (251, 6)
210.0 /	16.29066 (206, 6)	13.84136 (35, 4)	10.65972 (35, 4)	13.73755 (38, 5)	12.28032 (38, 5)
200.0 /	15.19576C(203, 3)	13.14098 (104, 3)	11.85057 (104, 3)	8.83844 (104, 3)	8.04548C(225, 7)
190.0 /	17.62150 (118, 4)	14.72645C(355, 4)	13.27829 (44, 5)	11.55535 (32, 2)	10.17371 (32, 2)
180.0 /	18.00141 (44, 5)	16.63069 (44, 5)	13.37595C(355, 4)	12.05365 (62, 8)	12.07796 (62, 8)
170.0 /	20.43507 (17, 5)	16.36503 (17, 5)	12.81681 (77, 4)	10.00722 (132, 7)	9.32004 (42, 3)
160.0 /	13.16323 (208, 4)	12.56083 (77, 4)	14.45794 (264, 4)	12.60368 (264, 4)	10.41259 (264, 4)
150.0 /	11.25885 (209, 4)	10.39174 (365, 5)	13.06673 (59, 8)	14.53173 (59, 8)	12.92008 (59, 8)
140.0 /	18.27685 (240, 5)	15.16411 (255, 6)	14.72544 (255, 6)	12.59781 (60, 1)	13.31763 (60, 1)
130.0 /	15.03830 (283, 4)	13.75166 (240, 5)	14.53447 (187, 3)	15.83363 (66, 7)	13.79097 (66, 7)
120.0 /	14.66852 (179, 3)	14.97165 (204, 6)	13.43413 (240, 6)	12.91823 (52, 3)	14.57413 (318, 6)
110.0 /	16.27330 (234, 5)	16.25731 (355, 5)	14.64385 (56, 6)	13.45752 (56, 6)	12.41460 (36, 6)
100.0 /	17.80209 (161, 6)	17.89741 (161, 6)	15.09995 (265, 6)	12.91387 (107, 6)	11.81827 (185, 3)
90.0 /	19.20342 (236, 4)	17.68937 (236, 4)	13.92480 (236, 4)	12.35686 (14, 4)	10.56587 (14, 4)
80.0 /	23.69806 (229, 6)	18.79165 (147, 5)	15.67517 (147, 5)	11.16758 (162, 5)	10.96012 (150, 3)
70.0 /	23.74393 (328, 5)	22.52312 (270, 6)	19.88529 (270, 6)	14.73392 (328, 5)	10.20832 (270, 6)
60.0 /	24.92174 (117, 4)	19.51092 (117, 4)	15.15882 (56, 4)	12.56449 (246, 4)	10.32523 (307, 4)
50.0 /	20.11122 (202, 4)	19.70893 (64, 5)	16.58755 (56, 5)	13.83528 (64, 5)	11.14944 (175, 6)
40.0 /	21.17525 (65, 4)	19.13601 (65, 4)	15.09995 (42, 4)	12.59486 (98, 8)	12.38687 (58, 7)
30.0 /	19.43063 (18, 5)	17.09040 (76, 4)	13.76714 (47, 5)	13.24835 (1, 5)	12.96668 (364, 7)
20.0 /	17.54191 (110, 4)	15.87053C(8, 4)	15.19970 (63, 4)	15.40885 (63, 4)	13.73250 (3, 6)
10.0 /	23.31720 (239, 4)	19.00817 (195, 4)	13.41192 (4, 3)	13.14929 (350, 3)	11.67222 (350, 3)
360.0 /	24.93682 (195, 4)	19.54714 (195, 4)	18.27692 (110, 3)	16.63753 (110, 3)	13.50406 (110, 3)

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2ND HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.93682 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	9.36537 (264, 7)	7.53480 (264, 7)	5.78611 (264, 7)	5.21893C(63, 8)	2.98205C(63, 8)
340.0 /	10.29249 (209, 4)	7.92661 (209, 4)	6.65136 (117, 2)	6.12554C(73, 8)	2.84308C(76, 3)

330.0 /	9.93950 (363, 3)	8.26200 (345, 2)	6.69765 (345, 2)	5.25256 (363, 1)	2.79725C(209, 8)
320.0 /	10.23986 (80, 3)	8.27146C(176, 8)	8.19082 (210, 1)	7.48075 (210, 1)	4.03189 (210, 1)
310.0 /	9.91550 (338, 8)	8.38373 (156, 1)	7.15265 (194, 1)	6.43529 (194, 1)	3.41172 (194, 1)
300.0 /	11.92968 (143, 2)	11.46533 (155, 2)	8.98221 (155, 2)	7.79362 (75, 2)	4.22718 (75, 2)
290.0 /	13.74114 (189, 7)	11.58676C(161, 2)	10.77122C(161, 2)	8.42247 (1, 1)	3.25232 (1, 1)
280.0 /	14.60159 (194, 7)	11.25768 (194, 7)	9.13638 (307, 3)	7.79383 (187, 2)	4.22721 (187, 2)
270.0 /	11.58189 (277, 2)	10.48691 (348, 8)	8.80806 (348, 8)	7.70442C(327, 2)	4.62014C(327, 2)
260.0 /	10.15513 (122, 6)	7.85714 (50, 3)	6.74119 (242, 1)	6.12568 (222, 2)	3.59209 (222, 2)
250.0 /	11.84655 (114, 1)	8.59521 (114, 1)	7.43993 (251, 2)	6.63651 (251, 2)	3.54725 (251, 2)
240.0 /	13.50990 (8, 8)	9.87663 (8, 8)	7.42862 (324, 1)	6.12554C(22, 7)	3.59208 (344, 7)
230.0 /	13.17187 (342, 1)	10.43889 (267, 1)	8.70875 (305, 2)	7.45064 (305, 2)	3.79865 (305, 2)
220.0 /	10.15769 (251, 6)	8.04611C(197, 8)	6.75744C(197, 8)	5.49719 (123, 2)	2.79725C(1, 8)
210.0 /	9.79845 (38, 5)	8.57731 (182, 2)	8.34431 (73, 1)	7.59016 (73, 1)	3.15508C(247, 3)
200.0 /	6.78662 (288, 3)	5.15259 (82, 3)	5.69013 (299, 7)	4.97160C(71, 8)	2.94797 (10, 1)
190.0 /	8.02685 (32, 2)	6.71088 (288, 1)	5.83838 (352, 1)	5.21760 (352, 1)	2.83466 (352, 1)
180.0 /	10.29247 (62, 8)	8.04609C(229, 7)	6.47112 (56, 7)	6.12554 (258, 8)	3.59208 (258, 8)
170.0 /	7.49089 (32, 1)	5.68317 (37, 7)	4.38796C(214, 2)	3.74493C(25, 8)	2.42780C(25, 8)
160.0 /	8.27431 (264, 4)	6.54162 (202, 7)	5.36818 (202, 7)	4.23568 (92, 7)	2.29474 (240, 7)
150.0 /	10.29247C(265, 7)	8.27879 (90, 7)	6.90410C(224, 8)	5.54544 (84, 3)	2.98202C(174, 8)
140.0 /	10.75639 (183, 3)	7.74864 (183, 3)	7.64787 (60, 1)	5.94140 (161, 8)	2.98056 (161, 8)
130.0 /	10.83733 (66, 7)	8.34667 (153, 8)	8.61534 (215, 1)	7.75964 (215, 1)	4.24101C(51, 2)
120.0 /	13.48565 (234, 7)	10.99431 (234, 7)	8.53997 (234, 7)	6.26931 (234, 7)	2.79725C(112, 1)
110.0 /	9.41598 (36, 6)	6.86386 (184, 7)	5.89502 (16, 6)	4.81828 (117, 8)	2.67202 (118, 1)
100.0 /	10.29248 (60, 1)	7.92601 (60, 1)	5.90119 (60, 1)	4.24866 (239, 7)	1.89633 (185, 3)
90.0 /	8.20727 (14, 4)	5.89897 (14, 4)	5.66298 (50, 7)	5.54484 (50, 7)	3.41774 (50, 7)
80.0 /	7.84741 (1, 3)	6.64094C(235, 3)	5.27341 (150, 3)	4.23569 (214, 1)	1.90501C(7, 7)
70.0 /	7.38175 (265, 1)	5.90066 (265, 1)	4.66017C(235, 1)	3.64330C(19, 7)	2.14448C(19, 7)
60.0 /	8.55174 (307, 4)	6.22854 (185, 3)	5.94902 (213, 8)	5.25254 (213, 8)	2.98202 (165, 1)
50.0 /	10.08235 (176, 7)	8.36140 (176, 7)	7.36775 (175, 7)	6.43211 (175, 7)	3.36550 (175, 7)
40.0 /	9.97224 (93, 7)	7.94218 (151, 7)	6.95809 (151, 7)	5.21891 (81, 2)	2.67202 (288, 7)
30.0 /	11.70455 (47, 8)	9.80860 (47, 8)	7.73308 (47, 8)	5.74262 (47, 8)	2.47367 (18, 6)
20.0 /	11.52276 (3, 6)	8.83615 (3, 6)	6.58370 (3, 6)	5.75750 (63, 7)	2.98203C(333, 7)
10.0 /	9.26950 (350, 3)	6.97356 (59, 2)	5.74110 (59, 2)	5.21890 (59, 1)	2.85648 (4, 3)
360.0 /	10.11723 (110, 3)	7.02685 (110, 3)	5.75416 (64, 6)	5.21891 (265, 2)	2.98203 (265, 2)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 21.57517 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	15.39052 (157, 2)	13.52266 (157, 2)	10.23480 (157, 2)	7.45845 (264, 3)	7.39978 (264, 3)
340.0 /	14.51691 (160, 2)	12.61896 (160, 2)	9.47051 (160, 2)	6.45414C(239, 1)	6.46481C(239, 1)
330.0 /	14.01134 (221, 2)	11.70096 (221, 2)	8.52154 (221, 2)	6.26774 (33, 2)	5.32998 (350, 1)
320.0 /	10.82905 (22, 2)	10.30098 (22, 2)	8.22005 (22, 2)	8.72158 (116, 1)	7.84275 (340, 1)
310.0 /	11.52100 (134, 2)	12.61569 (155, 2)	12.48603 (155, 2)	10.42036 (155, 2)	7.98757 (155, 2)
300.0 /	15.58513 (134, 2)	13.81732 (134, 2)	10.54751 (134, 2)	9.65550 (155, 1)	8.76713 (155, 1)
290.0 /	9.52265 (137, 2)	7.53573 (356, 2)	7.25424C(135, 1)	7.86978C(135, 1)	8.22267C(161, 1)
280.0 /	11.49794 (330, 2)	11.16493 (330, 2)	9.75686C(137, 1)	10.10004C(137, 1)	9.69164C(137, 1)
270.0 /	12.71328 (244, 2)	12.93985 (315, 2)	10.83099 (315, 2)	8.91933 (39, 3)	8.19091 (39, 3)
260.0 /	11.26509 (249, 2)	11.01742C(187, 2)	10.63550C(187, 2)	8.87052C(187, 2)	6.85460C(187, 2)

250.0 /	12.68882 (266, 2)	11.73092 (122, 2)	11.09483 (122, 2)	9.29267 (113, 3)	8.04738 (113, 3)
240.0 /	16.75661 (123, 2)	15.67441 (123, 2)	12.67750 (123, 2)	11.18254 (8, 3)	9.99661 (8, 3)
230.0 /	12.76843 (35, 2)	13.18151 (299, 2)	11.85828 (299, 2)	10.15361 (343, 2)	9.51845 (267, 1)
220.0 /	13.03119 (256, 2)	11.92929 (256, 2)	9.30598 (256, 2)	7.99431C(197, 3)	7.78123C(197, 3)
210.0 /	10.42541 (256, 2)	9.68115 (256, 2)	7.63988 (256, 2)	5.56264 (296, 2)	4.69934 (296, 2)
200.0 /	9.79157 (118, 2)	7.85692 (118, 2)	6.02065 (288, 2)	5.40981 (309, 2)	4.51556 (309, 2)
190.0 /	10.64857 (44, 2)	10.41930 (44, 2)	8.63756 (44, 2)	7.34537C(77, 1)	7.20547 (288, 1)
180.0 /	9.45583 (17, 2)	9.69372 (44, 2)	8.91723 (44, 2)	7.06185 (44, 2)	5.81941 (297, 2)
170.0 /	8.88456 (77, 2)	9.21814 (24, 2)	8.28154 (24, 2)	6.35341 (24, 2)	5.65085C(42, 1)
160.0 /	6.05098 (77, 2)	6.07257 (24, 2)	6.19809 (8, 3)	7.65447 (8, 3)	7.27367 (8, 3)
150.0 /	6.62823 (283, 2)	5.69068 (283, 2)	8.29614 (59, 3)	8.98237 (59, 3)	7.88162 (59, 3)
140.0 /	9.33288 (283, 2)	8.25671 (283, 2)	8.06425C(183, 1)	8.01968C(183, 1)	6.92683C(183, 1)
130.0 /	9.68757 (240, 2)	6.96278 (240, 2)	8.75996 (66, 3)	9.21152 (66, 3)	7.98656 (66, 3)
120.0 /	9.03362C(234, 2)	7.96204C(234, 2)	7.52331C(234, 3)	8.36366C(234, 3)	8.07093C(234, 3)
110.0 /	12.14350C(234, 2)	12.34159 (181, 2)	10.67597 (181, 2)	7.89819 (181, 2)	7.46427C(37, 1)
100.0 /	11.70191 (55, 2)	10.81681 (185, 2)	9.30248 (215, 2)	7.30059 (215, 2)	6.70952C(239, 3)
90.0 /	12.95407 (236, 2)	11.73572 (236, 2)	9.10661 (236, 2)	6.35738 (147, 2)	4.62345 (147, 2)
80.0 /	13.04695 (117, 2)	11.75049 (117, 2)	9.03474 (117, 2)	6.20775C(229, 3)	5.99450C(73, 3)
70.0 /	14.47618C(20, 2)	13.01851C(20, 2)	10.05432C(20, 2)	8.53470C(8, 2)	6.85780C(8, 2)
60.0 /	14.96692 (227, 2)	13.60325 (227, 2)	10.56058 (227, 2)	7.04251 (227, 2)	6.13691C(74, 3)
50.0 /	14.83074 (56, 2)	14.15323 (56, 2)	11.32712 (56, 2)	7.72853 (56, 2)	7.28064 (174, 1)
40.0 /	11.78768 (18, 2)	10.96146 (18, 2)	8.89028 (98, 3)	9.04816 (98, 3)	7.68919 (98, 3)
30.0 /	11.95005 (149, 2)	9.26668 (149, 2)	7.34394 (95, 3)	7.56140 (47, 3)	7.54083 (47, 3)
20.0 /	11.90159 (194, 2)	9.51318 (194, 2)	8.89345 (63, 2)	7.92197 (63, 2)	6.45974 (63, 2)
10.0 /	14.17667 (239, 2)	12.57300 (239, 2)	9.49353 (239, 2)	6.22243 (4, 1)	5.85541 (4, 1)
360.0 /	21.57517 (239, 2)	19.71812 (239, 2)	15.34751 (239, 2)	10.24727 (239, 2)	6.75191 (239, 2)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 21.57517 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	6.34854 (264, 3)	6.21405C(117, 1)	5.64682C(117, 1)	4.69343C(117, 1)	2.31507C(117, 1)
340.0 /	5.53748C(239, 1)	4.27807C(239, 1)	3.23556C(73, 3)	3.06277C(73, 3)	1.79604C(73, 3)
330.0 /	4.50064 (363, 1)	4.86066C(161, 1)	5.29123C(161, 1)	4.91901C(161, 1)	2.79882C(161, 1)
320.0 /	7.17141 (155, 3)	6.24582C(210, 1)	5.90606C(210, 1)	5.02251C(210, 1)	2.49354C(210, 1)
310.0 /	6.38065 (146, 3)	5.83526 (156, 1)	5.31735 (156, 1)	4.86669C(21, 1)	3.04430C(21, 1)
300.0 /	7.27986 (155, 1)	5.63392C(334, 1)	5.59148C(334, 1)	4.85780C(334, 1)	2.41124C(208, 1)
290.0 /	8.03332C(161, 1)	7.30728C(161, 1)	6.27046C(161, 1)	5.01443C(161, 1)	2.31542C(161, 1)
280.0 /	8.87729C(137, 1)	7.83492C(137, 1)	6.66617C(137, 1)	5.30078C(137, 1)	2.40132C(137, 1)
270.0 /	6.65720 (39, 3)	5.50735 (348, 3)	4.44575 (348, 3)	4.19075C(327, 1)	2.42254C(327, 1)
260.0 /	5.28620 (89, 3)	4.42242 (124, 3)	4.17379C(190, 1)	3.94908 (15, 1)	2.50735 (15, 1)
250.0 /	6.81296 (251, 1)	6.20730 (251, 1)	5.33192 (251, 1)	4.25499 (251, 1)	1.94399 (251, 1)
240.0 /	7.93836 (8, 3)	5.95919 (324, 1)	4.96620C(216, 1)	4.13067C(216, 1)	2.25138C(270, 1)
230.0 /	9.00163 (267, 1)	7.54640 (267, 1)	5.96067 (267, 1)	4.72259 (139, 1)	2.47703 (139, 1)
220.0 /	6.90708C(197, 3)	5.62064C(197, 3)	4.38785C(197, 3)	3.24225C(197, 3)	1.49928 (300, 1)
210.0 /	4.35563C(247, 1)	4.02305C(247, 1)	4.17215C(73, 1)	3.79508C(73, 1)	2.06267C(73, 1)
200.0 /	3.43224 (309, 2)	2.61508 (111, 1)	2.70153C(71, 3)	2.48580C(71, 3)	1.47399C(10, 1)
190.0 /	6.67964 (288, 1)	5.50564 (288, 1)	4.30258 (288, 1)	3.18104 (288, 1)	1.30316 (352, 1)
180.0 /	4.80494 (67, 1)	3.97108C(238, 3)	3.21582C(238, 3)	2.48580C(41, 1)	1.39862C(41, 1)

170.0 /	4.70218C(42, 1)	3.52052C(42, 1)	2.72608 (111, 3)	2.26398 (111, 3)	1.21390C(25, 3)
160.0 /	6.00746 (8, 3)	4.51910 (8, 3)	3.31138 (8, 3)	2.31318 (8, 3)	.87082 (92, 3)
150.0 /	6.17997 (59, 3)	4.44953 (59, 3)	3.21077 (90, 3)	2.75931C(269, 3)	1.43528C(269, 3)
140.0 /	5.43150C(183, 1)	3.93251C(183, 1)	3.39736C(76, 3)	2.90227C(76, 3)	1.46429 (118, 1)
130.0 /	6.25686 (66, 3)	5.55741 (156, 3)	5.38190 (156, 3)	4.64329 (156, 3)	2.36010 (156, 3)
120.0 /	6.93051C(234, 3)	5.43769C(234, 3)	4.12072C(234, 3)	3.00848C(112, 1)	1.64533C(112, 1)
110.0 /	7.02271C(37, 1)	5.96006C(37, 1)	4.84523C(37, 1)	3.79169C(37, 1)	1.91082C(37, 1)
100.0 /	6.06806C(239, 3)	4.96432C(239, 3)	3.86908C(239, 3)	2.84355C(239, 3)	1.09589C(239, 3)
90.0 /	3.73409C(187, 2)	2.90067C(213, 1)	3.23556C(213, 1)	3.06277C(213, 1)	1.79604C(213, 1)
80.0 /	5.31347C(73, 3)	4.25056C(73, 3)	3.25843C(73, 3)	2.51774C(214, 1)	1.22628C(214, 1)
70.0 /	5.06994C(8, 2)	3.98362C(19, 3)	3.73948C(19, 3)	3.18596C(19, 3)	1.61310C(19, 3)
60.0 /	5.68740C(74, 3)	4.85335C(74, 3)	3.93499C(74, 3)	2.98119C(74, 3)	1.20256C(74, 3)
50.0 /	6.74674 (174, 1)	5.63275 (174, 1)	4.50330 (174, 1)	3.58340 (175, 3)	1.66540 (175, 3)
40.0 /	5.94386 (98, 3)	4.68025 (58, 3)	3.54656 (58, 3)	2.54882 (58, 3)	1.16109C(235, 1)
30.0 /	6.61402C(18, 3)	5.44526C(18, 3)	4.25866C(18, 3)	3.14431C(18, 3)	1.23597C(18, 3)
20.0 /	4.88386 (63, 2)	3.61601 (47, 3)	2.77952C(333, 3)	2.60945C(333, 3)	1.49101C(333, 3)
10.0 /	4.85447 (4, 1)	4.49757 (59, 1)	4.23755 (59, 1)	3.61011 (59, 1)	1.81406 (59, 1)
360.0 /	5.27999C(364, 3)	4.65137C(364, 3)	3.77479C(364, 3)	2.85321C(364, 3)	1.20679C(63, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 16.34722 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	11.68794 (160, 2)	10.21110 (153, 2)	8.43443 (153, 2)	6.68393 (157, 2)	5.92729C(117, 1)
340.0 /	13.50196 (220, 2)	11.47621 (153, 2)	8.95149 (153, 2)	6.14967 (160, 2)	5.98684 (333, 1)
330.0 /	12.92460 (220, 2)	10.52519 (220, 2)	7.50972 (220, 2)	6.06081 (350, 1)	5.26986 (33, 2)
320.0 /	10.37975 (64, 2)	9.52548 (218, 2)	8.10021 (116, 1)	8.20713 (156, 1)	7.70938 (155, 3)
310.0 /	10.59426 (155, 2)	9.92627C(20, 2)	8.13200C(20, 2)	7.57371C(210, 3)	7.43420 (146, 3)
300.0 /	12.33208 (92, 2)	12.30521 (92, 2)	10.17129 (92, 2)	7.47852 (361, 2)	7.21811 (337, 3)
290.0 /	8.28914 (330, 2)	7.50256 (137, 2)	6.80456 (115, 1)	7.64874C(161, 1)	8.06603C(1, 1)
280.0 /	10.70198 (39, 2)	9.33678 (39, 2)	9.03211 (330, 2)	8.69702 (194, 3)	8.87517 (194, 3)
270.0 /	12.69833 (315, 2)	12.51138 (244, 2)	10.31973 (244, 2)	7.96123 (277, 1)	7.14605 (277, 1)
260.0 /	9.95979 (267, 2)	8.78723 (325, 2)	8.09968 (303, 2)	7.89095 (89, 3)	6.81068 (89, 3)
250.0 /	12.64664 (249, 2)	11.68900 (266, 2)	9.14192 (266, 2)	8.83190 (122, 2)	7.18680 (301, 3)
240.0 /	13.37793 (266, 2)	12.38536 (266, 2)	10.01524 (8, 3)	9.48909 (304, 1)	8.78653 (324, 1)
230.0 /	12.28649 (299, 2)	13.15846 (35, 2)	11.12469 (35, 2)	9.70575 (342, 1)	9.01012 (342, 1)
220.0 /	12.48254 (216, 2)	11.38536 (216, 2)	8.88188 (216, 2)	7.88633 (38, 2)	6.97642 (38, 2)
210.0 /	7.39272 (141, 2)	6.69102 (15, 2)	5.59169 (15, 2)	5.24982 (313, 1)	4.66077 (38, 2)
200.0 /	8.31590 (288, 2)	7.67093 (288, 2)	5.62084 (101, 2)	4.41392 (101, 2)	4.02274C(225, 3)
190.0 /	10.19741 (118, 2)	7.93595 (118, 2)	6.44920 (297, 2)	6.65231 (297, 2)	7.06949C(77, 1)
180.0 /	9.08252 (44, 2)	8.44527 (17, 2)	6.68798C(355, 2)	6.74574 (297, 2)	5.81677 (38, 1)
170.0 /	8.59311 (24, 2)	6.98191 (77, 2)	5.78093 (11, 2)	5.76649C(42, 1)	4.62040 (24, 2)
160.0 /	5.38462 (24, 2)	5.45119 (264, 2)	6.17200 (59, 3)	6.61527 (59, 3)	5.75914 (59, 3)
150.0 /	5.41988C(365, 2)	5.64247 (59, 3)	6.36369 (59, 2)	6.68361 (59, 2)	6.03897C(265, 3)
140.0 /	7.43678 (240, 2)	6.83346C(183, 1)	6.29810 (283, 2)	6.59667 (350, 3)	5.72588 (350, 3)
130.0 /	6.69179 (223, 2)	6.23075 (66, 3)	8.02189 (346, 2)	8.21308 (346, 2)	7.00381 (346, 2)
120.0 /	7.72811 (233, 2)	6.94848 (162, 2)	6.16688 (52, 2)	5.72548 (181, 3)	6.24546 (181, 3)
110.0 /	11.95441 (181, 2)	10.39450C(234, 2)	8.39235C(355, 2)	6.68720C(37, 1)	5.60437 (181, 2)
100.0 /	11.24534 (236, 2)	10.62636 (215, 2)	9.28008 (185, 2)	6.75496 (185, 2)	5.49095 (215, 2)

90.0 /	11.52040 (185, 2)	10.70530 (185, 2)	8.41664 (185, 2)	6.08668 (236, 2)	4.53563C(187, 2)
80.0 /	12.54996 (206, 2)	9.66042 (206, 2)	8.20544C(229, 3)	5.97217 (117, 2)	5.12947 (235, 3)
70.0 /	13.19065 (117, 2)	11.28836 (328, 2)	9.47315C(8, 2)	6.70313C(20, 2)	4.42504C(20, 2)
60.0 /	14.17895 (112, 2)	11.68667 (56, 2)	9.26729 (56, 2)	6.56766C(176, 3)	5.40825C(176, 3)
50.0 /	14.79489C(186, 2)	12.47401C(186, 2)	9.14313C(186, 2)	7.05951C(176, 3)	6.71033C(176, 3)
40.0 /	11.09657 (65, 2)	10.19519 (65, 2)	8.66381 (18, 2)	6.70524 (58, 3)	6.80260 (58, 3)
30.0 /	10.09258 (76, 2)	8.87771 (76, 2)	6.84907 (1, 2)	7.53937 (95, 3)	7.20557C(18, 3)
20.0 /	10.53873 (149, 2)	8.82364 (63, 2)	7.55043C(8, 2)	6.91121 (13, 2)	5.98902 (13, 2)
10.0 /	10.94197 (110, 2)	9.16114 (195, 2)	6.63436 (195, 2)	6.12696 (239, 2)	5.34577 (363, 3)
360.0 /	16.34722 (157, 2)	13.82178 (157, 2)	10.15905 (157, 2)	7.38733 (64, 3)	6.17839 (231, 1)

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2ND HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 16.34722 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	6.28569C(117, 1)	4.92949 (264, 3)	4.18280C(316, 3)	3.37212C(316, 3)	1.53997C(316, 3)
340.0 /	5.34090 (333, 1)	4.25720 (333, 1)	3.23478 (333, 1)	2.32397 (333, 1)	1.05734 (231, 3)
330.0 /	4.19414 (350, 1)	4.30755 (363, 1)	3.86091 (363, 1)	3.21200 (363, 1)	1.62898 (363, 1)
320.0 /	6.70227 (340, 1)	5.92420 (155, 3)	4.61933 (155, 3)	3.61948C(176, 3)	2.00893C(176, 3)
310.0 /	5.93339 (156, 1)	4.95602 (146, 3)	4.90110C(21, 1)	4.43394 (156, 1)	2.15888 (156, 1)
300.0 /	6.29890 (359, 1)	5.61574 (155, 1)	4.72025C(208, 1)	4.31845C(208, 1)	2.40832C(334, 1)
290.0 /	7.52218C(1, 1)	6.49795C(135, 1)	5.96306C(224, 1)	4.96386C(224, 1)	2.30873C(224, 1)
280.0 /	8.22516 (194, 3)	7.13672 (194, 3)	5.91310 (194, 3)	4.58535 (194, 3)	1.96975 (194, 3)
270.0 /	6.36789 (348, 3)	4.94352 (39, 3)	4.43725C(327, 1)	3.35872 (348, 3)	1.79618C(76, 1)
260.0 /	4.94931C(187, 2)	4.12680 (252, 3)	3.97583 (15, 1)	3.79607C(190, 1)	2.15147 (353, 1)
250.0 /	6.47971 (252, 1)	5.59979 (252, 1)	4.91980C(261, 1)	4.04138C(261, 1)	1.92061 (295, 1)
240.0 /	7.62194 (324, 1)	5.78014 (8, 3)	4.61072C(245, 1)	4.09925C(270, 1)	2.01068C(216, 1)
230.0 /	7.35507 (342, 1)	5.99446 (305, 1)	5.34917 (139, 1)	4.44073 (267, 1)	2.24640 (305, 1)
220.0 /	5.48263 (38, 2)	4.45034 (158, 1)	3.63489 (158, 1)	2.84444 (300, 1)	1.27631C(197, 3)
210.0 /	3.81252 (86, 1)	3.93617C(73, 1)	3.37872C(247, 1)	2.62757C(247, 1)	1.19882C(256, 1)
200.0 /	3.29598C(225, 3)	2.52257C(71, 3)	2.23592C(71, 1)	2.15922C(71, 1)	1.39862C(71, 3)
190.0 /	5.85163C(77, 1)	4.38533C(77, 1)	3.38347 (309, 3)	2.69017 (309, 3)	1.27801C(222, 3)
180.0 /	4.57504 (38, 1)	3.92463 (67, 1)	3.05896 (67, 1)	2.42579C(238, 3)	1.35163 (258, 3)
170.0 /	3.20610 (24, 2)	2.98570 (111, 3)	2.54909C(42, 1)	1.87246C(25, 3)	1.08990 (111, 3)
160.0 /	4.48529 (59, 3)	3.20737 (59, 3)	2.25807 (59, 3)	1.74906 (26, 1)	.86140 (240, 3)
150.0 /	5.14623C(265, 3)	4.15652 (90, 3)	3.15118 (59, 3)	2.65201C(224, 3)	1.38638C(224, 3)
140.0 /	4.51554 (60, 1)	3.68531 (60, 1)	2.90726 (118, 1)	2.66890 (118, 1)	1.40681C(76, 3)
130.0 /	5.42519 (346, 2)	4.52755 (66, 3)	4.39197C(183, 1)	3.95468C(183, 1)	2.12762C(183, 1)
120.0 /	5.69981 (181, 3)	4.64184 (181, 3)	3.59210 (181, 3)	2.96774C(234, 3)	1.39862C(183, 1)
110.0 /	4.62989 (173, 3)	3.79097 (237, 3)	3.14748 (237, 3)	2.43849 (237, 3)	1.07110C(16, 3)
100.0 /	4.13354C(8, 2)	3.27081C(185, 1)	2.68409C(185, 1)	2.05334C(185, 1)	.87082 (165, 1)
90.0 /	3.60056 (178, 3)	2.89141 (178, 3)	2.83149C(50, 3)	2.77242C(50, 3)	1.70887C(50, 3)
80.0 /	4.42403 (235, 3)	3.46784 (235, 3)	3.02843C(214, 1)	2.36939C(73, 3)	.95251C(7, 3)
70.0 /	3.80938C(19, 3)	3.48140C(8, 2)	2.43198C(8, 2)	2.12424C(235, 1)	1.16246C(235, 1)
60.0 /	4.13354C(185, 1)	3.11427C(185, 1)	2.54305C(73, 3)	2.23913C(73, 3)	1.18891C(73, 3)
50.0 /	5.91866 (175, 3)	5.21995 (175, 3)	4.46642 (175, 3)	3.44975 (174, 1)	1.57462 (174, 1)
40.0 /	5.93505 (58, 3)	4.25210 (98, 3)	3.00869 (98, 3)	2.25450 (151, 3)	1.14515C(288, 3)
30.0 /	6.56434 (47, 3)	5.17150 (47, 3)	3.91491 (47, 3)	2.81300 (47, 3)	1.19882C(316, 3)
20.0 /	4.72650 (47, 3)	3.43537 (63, 2)	2.77520C(63, 3)	2.46778C(63, 3)	1.28339C(63, 3)

10.0 /	4.75546 (363, 3)	3.78005 (363, 3)	2.92359 (4, 1)	2.23841 (4, 1)	1.08930 (4, 1)
360.0 /	4.86366 (231, 1)	3.51964 (231, 1)	2.50651 (231, 1)	2.16512C(63, 3)	1.18646 (59, 1)

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HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.59283 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	6.15621C(157, 1)	5.40907C(157, 1)	4.37901 (231, 1)	4.23153 (231, 1)	3.52195 (264, 1)
340.0 /	5.43912 (153, 1)	5.50540 (153, 1)	4.85572 (153, 1)	3.72512 (153, 1)	2.99112 (231, 1)
330.0 /	4.87525C(221, 1)	4.33572 (218, 1)	3.94790 (218, 1)	3.61895 (115, 1)	3.09982 (115, 1)
320.0 /	4.98731C(204, 1)	4.95134C(204, 1)	4.54977C(204, 1)	3.83169C(204, 1)	3.21116 (155, 1)
310.0 /	4.73358 (154, 1)	5.48161 (155, 1)	5.81299 (155, 1)	5.18634 (155, 1)	4.16164 (155, 1)
300.0 /	6.06289C(134, 1)	5.45625C(134, 1)	4.47117 (337, 1)	4.81767 (337, 1)	4.40065 (337, 1)
290.0 /	4.01729C(137, 1)	3.32631C(137, 1)	4.13383 (336, 1)	4.79295 (336, 1)	4.61037 (336, 1)
280.0 /	5.23871C(137, 1)	5.16311C(137, 1)	4.98623C(137, 1)	4.74538C(137, 1)	4.40578C(137, 1)
270.0 /	4.50929 (315, 1)	5.00541 (315, 1)	4.86762 (39, 1)	4.55803 (39, 1)	3.99232 (39, 1)
260.0 /	4.54606 (249, 1)	4.59315 (304, 1)	5.40308 (304, 1)	5.17158 (304, 1)	4.29481 (304, 1)
250.0 /	5.68813 (249, 1)	5.49774 (249, 1)	4.98984 (122, 1)	4.91198 (114, 1)	4.48404 (291, 1)
240.0 /	8.36605 (123, 1)	8.56202 (123, 1)	7.52646 (123, 1)	6.71729 (342, 1)	5.90883 (342, 1)
230.0 /	5.48259C(259, 1)	5.74429C(35, 1)	6.21685 (343, 1)	6.90662 (343, 1)	6.21486 (343, 1)
220.0 /	5.78903C(259, 1)	4.84137C(216, 1)	6.23721 (311, 1)	6.35957 (311, 1)	5.40939 (311, 1)
210.0 /	4.03102C(259, 1)	3.36764C(256, 1)	3.14263 (296, 1)	3.19815 (296, 1)	2.76491C(247, 1)
200.0 /	3.98744C(288, 1)	3.95228C(288, 1)	3.47886 (309, 1)	3.60234 (309, 1)	3.12335 (309, 1)
190.0 /	3.85698 (44, 1)	3.77823 (44, 1)	3.74190C(77, 1)	3.82790 (297, 1)	3.26408 (297, 1)
180.0 /	3.46311 (67, 1)	3.68094 (67, 1)	3.71317 (297, 1)	3.85514 (297, 1)	3.52371C(42, 1)
170.0 /	3.10855C(17, 1)	3.08568 (24, 1)	2.82063 (24, 1)	2.35755 (11, 1)	2.05539C(42, 1)
160.0 /	2.14490C(77, 1)	2.20991 (59, 1)	3.16811 (59, 1)	3.35690 (59, 1)	3.06260C(8, 1)
150.0 /	3.43158C(283, 1)	3.51712C(283, 1)	4.88910 (59, 1)	5.22420 (59, 1)	4.54887 (59, 1)
140.0 /	4.19783C(283, 1)	3.76424C(283, 1)	4.27579 (60, 1)	4.91638 (60, 1)	4.57527 (60, 1)
130.0 /	3.66795C(240, 1)	3.45906C(233, 1)	4.32380 (66, 1)	4.48494 (66, 1)	3.85717 (66, 1)
120.0 /	5.11936C(234, 1)	5.41810C(234, 1)	5.27273C(234, 1)	4.78709C(234, 1)	4.51401 (181, 1)
110.0 /	5.10213C(234, 1)	4.75514C(234, 1)	4.54749 (181, 1)	4.05426 (181, 1)	3.42786 (181, 1)
100.0 /	5.95326C(180, 1)	5.90874C(180, 1)	5.13413C(180, 1)	4.06003C(180, 1)	3.15985C(180, 1)
90.0 /	5.95591C(225, 1)	5.24989C(236, 1)	4.09086C(236, 1)	3.03927C(169, 1)	2.57890C(169, 1)
80.0 /	5.60617C(225, 1)	4.37518C(225, 1)	4.03881 (84, 1)	3.42980C(235, 1)	3.51676C(235, 1)
70.0 /	5.06666C(20, 1)	4.55648C(20, 1)	3.67799C(328, 1)	2.69517C(8, 1)	2.16562C(8, 1)
60.0 /	5.49467C(56, 1)	5.19408C(56, 1)	4.11880C(56, 1)	2.77823C(56, 1)	2.16443C(176, 1)
50.0 /	6.59144C(56, 1)	6.29032C(56, 1)	5.20853C(175, 1)	4.72590C(175, 1)	4.02623C(175, 1)
40.0 /	4.72453C(18, 1)	4.56857C(74, 1)	3.73711C(74, 1)	3.30957 (99, 1)	2.83522 (99, 1)
30.0 /	4.33020 (149, 1)	3.87874C(74, 1)	3.89338 (47, 1)	3.74847 (47, 1)	3.34794 (47, 1)
20.0 /	4.23672C(213, 1)	3.59336C(213, 1)	3.25238C(63, 1)	3.03325C(63, 1)	2.75170C(63, 1)
10.0 /	6.30074C(239, 1)	5.58800C(239, 1)	4.21935C(239, 1)	2.72309C(239, 1)	2.28946 (363, 1)
360.0 /	9.59283C(239, 1)	8.79381C(239, 1)	6.92847C(239, 1)	4.78075C(239, 1)	3.87694 (231, 1)

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HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.59283 AND OCCURRED AT (313.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	2.94502 (264, 1)	2.27946 (264, 1)	1.72824 (264, 1)	1.42843C(117, 1)	.70459C(117, 1)
340.0 /	2.52093 (231, 1)	2.01938 (231, 1)	1.58731 (231, 1)	1.18612 (231, 1)	.57687C(73, 1)
330.0 /	2.59169C(345, 1)	2.09249C(345, 1)	1.61518C(345, 1)	1.49710C(161, 1)	.85182C(161, 1)
320.0 /	2.82299 (155, 1)	2.24503 (155, 1)	1.83386C(210, 1)	1.53287C(210, 1)	.74364C(210, 1)
310.0 /	3.45556 (146, 1)	2.71134 (146, 1)	2.26084 (147, 1)	1.81693 (147, 1)	.96136C(21, 1)
300.0 /	3.59474 (337, 1)	2.68667 (337, 1)	2.23373C(334, 1)	1.81100C(334, 1)	.81843C(334, 1)
290.0 /	3.90152 (336, 1)	3.00435 (336, 1)	2.23909 (336, 1)	1.71499C(263, 1)	.86068C(263, 1)
280.0 /	3.88694C(137, 1)	3.36094 (194, 1)	3.03417 (194, 1)	2.50843 (194, 1)	1.19539 (194, 1)
270.0 /	3.39484 (39, 1)	2.83695 (39, 1)	2.39179 (217, 1)	1.90048 (217, 1)	.84664 (217, 1)
260.0 /	3.27011 (304, 1)	2.44117C(198, 1)	1.98534C(198, 1)	1.52454C(198, 1)	.86170 (15, 1)
250.0 /	3.71138 (291, 1)	2.80644 (291, 1)	2.16196 (141, 1)	1.66941 (141, 1)	.72504 (141, 1)
240.0 /	4.65066 (342, 1)	3.36439 (342, 1)	2.55933 (280, 1)	1.97411 (280, 1)	1.04826C(270, 1)
230.0 /	4.98044 (343, 1)	3.66117 (343, 1)	2.63752 (343, 1)	1.81638 (343, 1)	.83570 (139, 1)
220.0 /	4.18335 (311, 1)	2.99364 (311, 1)	2.11885 (311, 1)	1.52940 (300, 1)	.71079 (300, 1)
210.0 /	2.62134C(247, 1)	2.21887C(247, 1)	1.76898C(247, 1)	1.32399C(247, 1)	.65137C(73, 1)
200.0 /	2.45611 (309, 1)	1.78335 (309, 1)	1.55919C(71, 1)	1.46685C(71, 1)	.85345C(71, 1)
190.0 /	2.72619 (309, 1)	2.26549 (309, 1)	1.80221 (309, 1)	1.34902 (309, 1)	.53672 (309, 1)
180.0 /	2.85780C(42, 1)	2.09964C(42, 1)	1.50128C(42, 1)	1.19365C(62, 1)	.60578C(62, 1)
170.0 /	1.68477C(42, 1)	1.24685C(42, 1)	.90869 (111, 1)	.75466 (111, 1)	.36330 (111, 1)
160.0 /	2.52946C(8, 1)	1.90278C(8, 1)	1.50467 (26, 1)	1.12622 (26, 1)	.44426 (26, 1)
150.0 /	3.55075 (59, 1)	2.54826 (59, 1)	1.80104 (59, 1)	1.21801 (59, 1)	.51078C(224, 1)
140.0 /	3.77676 (60, 1)	2.85810 (60, 1)	2.10726 (60, 1)	1.47967 (60, 1)	.52468 (60, 1)
130.0 /	3.00617 (66, 1)	2.16611 (66, 1)	1.79397 (156, 1)	1.54776 (156, 1)	.78670 (156, 1)
120.0 /	3.91444 (181, 1)	3.11647 (181, 1)	2.39349 (181, 1)	1.74329 (181, 1)	.66726 (181, 1)
110.0 /	2.71926 (181, 1)	2.19132C(37, 1)	1.72853C(37, 1)	1.31609C(37, 1)	.62323C(37, 1)
100.0 /	2.48738C(239, 1)	2.00071C(239, 1)	1.54441C(239, 1)	1.12761C(239, 1)	.43040C(239, 1)
90.0 /	2.09086C(213, 1)	1.97750C(213, 1)	1.78247C(213, 1)	1.48594C(213, 1)	.73462C(213, 1)
80.0 /	3.17520C(235, 1)	2.60147C(235, 1)	2.02935C(235, 1)	1.49133C(235, 1)	.57351C(235, 1)
70.0 /	1.60103C(8, 1)	1.79256C(235, 1)	1.76050C(235, 1)	1.52650C(235, 1)	.76724C(235, 1)
60.0 /	1.82395C(233, 1)	1.74910C(233, 1)	1.56865C(233, 1)	1.28812C(233, 1)	.60160C(233, 1)
50.0 /	3.35714C(175, 1)	2.75738C(175, 1)	2.25435C(175, 1)	1.75411C(175, 1)	.78262C(175, 1)
40.0 /	2.20543 (58, 1)	1.71844 (58, 1)	1.40597 (81, 1)	1.15960 (81, 1)	.56177 (81, 1)
30.0 /	2.73393 (47, 1)	2.05684 (47, 1)	1.51163 (47, 1)	1.06169 (47, 1)	.38697C(18, 1)
20.0 /	2.44553C(63, 1)	2.10703C(63, 1)	1.75787C(63, 1)	1.37506C(63, 1)	.60357C(63, 1)
10.0 /	1.93416 (363, 1)	1.49919 (59, 1)	1.41252 (59, 1)	1.20337 (59, 1)	.60469 (59, 1)
360.0 /	2.95026 (231, 1)	2.07456 (231, 1)	1.44533 (231, 1)	1.18151C(265, 1)	.57193C(265, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 6.55059 AND OCCURRED AT (313.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0

350.0 /	4.08384 (153, 1)	4.17061 (153, 1)	4.09392C(157, 1)	3.83166 (264, 1)	3.51845 (231, 1)
340.0 /	5.30653 (160, 1)	4.68690 (160, 1)	3.55463 (160, 1)	3.31148 (231, 1)	2.72257 (153, 1)
330.0 /	4.59412 (220, 1)	4.08328C(221, 1)	3.55315 (115, 1)	3.42108 (231, 1)	3.01767 (231, 1)
320.0 /	4.20596 (218, 1)	4.12068 (154, 1)	3.94217 (154, 1)	3.50758 (116, 1)	3.18201 (116, 1)
310.0 /	4.30732 (155, 1)	5.34747 (154, 1)	5.29638 (154, 1)	4.51789 (154, 1)	3.97398 (146, 1)
300.0 /	4.34697 (92, 1)	4.66382 (92, 1)	4.27758 (92, 1)	4.04950 (155, 1)	3.78583 (359, 1)
290.0 /	2.92294 (133, 1)	3.28801 (139, 1)	3.33894 (360, 1)	3.65195 (360, 1)	3.26576 (360, 1)
280.0 /	4.12387 (196, 1)	4.12256 (133, 1)	4.33924 (244, 1)	4.27485 (244, 1)	4.02655 (359, 1)
270.0 /	4.40477 (158, 1)	4.59537 (39, 1)	4.79824 (315, 1)	4.13362 (276, 1)	3.81912 (276, 1)
260.0 /	3.62997C(267, 1)	4.05402 (249, 1)	4.71472 (303, 1)	4.52008 (303, 1)	3.86676 (89, 1)
250.0 /	5.14675C(241, 1)	4.98618 (122, 1)	4.95716 (304, 1)	4.80589 (304, 1)	4.23437 (114, 1)
240.0 /	6.55059C(241, 1)	6.10068C(241, 1)	6.20700 (342, 1)	5.77996 (123, 1)	5.03991 (266, 1)
230.0 /	5.19296C(35, 1)	4.69982 (120, 1)	5.29228C(35, 1)	5.56427 (342, 1)	5.25295 (342, 1)
220.0 /	4.98571C(216, 1)	4.72828C(259, 1)	4.81447 (296, 1)	5.15683 (38, 1)	4.59897 (38, 1)
210.0 /	3.62624C(256, 1)	3.24396C(259, 1)	2.66637C(256, 1)	2.89264 (38, 1)	2.69784 (296, 1)
200.0 /	3.28078 (118, 1)	2.64878 (118, 1)	3.38013C(288, 1)	2.51250C(288, 1)	1.79691C(288, 1)
190.0 /	3.58529 (118, 1)	3.32789C(77, 1)	3.72292 (297, 1)	3.66533C(77, 1)	3.15125C(77, 1)
180.0 /	3.29312C(17, 1)	3.25455 (44, 1)	3.54212 (67, 1)	3.76064C(42, 1)	3.30777 (297, 1)
170.0 /	3.09032C(77, 1)	2.93330C(17, 1)	2.60628C(17, 1)	2.26925 (24, 1)	1.97748 (11, 1)
160.0 /	2.01078C(283, 1)	2.05212 (24, 1)	2.60972C(8, 1)	3.22293C(8, 1)	2.90343 (59, 1)
150.0 /	2.24385C(207, 1)	3.38223 (59, 1)	3.21556C(283, 1)	3.20774 (60, 1)	2.73901 (60, 1)
140.0 /	2.73061C(207, 1)	2.77772 (60, 1)	3.23949 (59, 1)	3.46727 (59, 1)	3.01816 (59, 1)
130.0 /	2.99089C(233, 1)	3.13234 (66, 1)	3.74108C(233, 1)	3.51274C(233, 1)	2.92737C(233, 1)
120.0 /	3.78110C(240, 1)	3.46891 (181, 1)	4.26950 (52, 1)	4.66184 (181, 1)	4.13551C(234, 1)
110.0 /	4.30070C(135, 1)	4.64456 (181, 1)	4.07530C(180, 1)	3.71394C(180, 1)	3.09944C(180, 1)
100.0 /	5.28316C(236, 1)	5.07838C(161, 1)	4.28822C(161, 1)	3.49131C(185, 1)	2.95524C(185, 1)
90.0 /	5.77456C(236, 1)	4.77897C(185, 1)	4.07300C(185, 1)	3.01026C(185, 1)	2.18719C(213, 1)
80.0 /	4.57655C(117, 1)	4.17145C(117, 1)	3.27190C(117, 1)	3.42160 (84, 1)	2.65121 (84, 1)
70.0 /	4.64081C(328, 1)	4.51534C(328, 1)	3.60478C(229, 1)	2.55268C(328, 1)	1.76189C(263, 1)
60.0 /	5.40151C(112, 1)	4.59023 (227, 1)	3.70751 (227, 1)	2.73022 (227, 1)	2.03558 (227, 1)
50.0 /	4.70747C(186, 1)	5.00419C(175, 1)	5.03427C(56, 1)	3.53566C(174, 1)	3.49637C(174, 1)
40.0 /	4.62861C(74, 1)	4.40564C(18, 1)	3.49453C(18, 1)	3.02134 (98, 1)	2.56625 (98, 1)
30.0 /	4.12083C(74, 1)	3.76290 (47, 1)	3.72270 (95, 1)	3.67439 (95, 1)	3.07898 (95, 1)
20.0 /	3.96720 (194, 1)	3.21104C(63, 1)	2.70201 (43, 1)	2.57857 (13, 1)	2.26819 (264, 1)
10.0 /	3.65129 (110, 1)	3.22289 (230, 1)	2.46278 (230, 1)	2.38112 (363, 1)	2.12533 (4, 1)
360.0 /	6.53889C(157, 1)	5.52871C(157, 1)	4.78812 (231, 1)	4.64475 (231, 1)	3.29182C(239, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1982 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 6.55059 AND OCCURRED AT (313.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	2.66696 (231, 1)	1.89123C(117, 1)	1.71860C(117, 1)	1.26379 (264, 1)	.54179 (264, 1)
340.0 /	2.22910C(76, 1)	1.82431C(76, 1)	1.41989C(76, 1)	1.04363C(76, 1)	.48594 (231, 1)
330.0 /	2.45035 (231, 1)	1.85406 (231, 1)	1.61039C(161, 1)	1.18064C(345, 1)	.57972 (363, 1)
320.0 /	2.62732 (116, 1)	2.02848 (116, 1)	1.71000 (155, 1)	1.23245 (155, 1)	.61204C(176, 1)
310.0 /	3.22428 (358, 1)	2.61244 (147, 1)	2.04376 (146, 1)	1.66633C(263, 1)	.84474C(263, 1)
300.0 /	3.24645 (359, 1)	2.62395 (361, 1)	2.19825 (361, 1)	1.72282 (361, 1)	.77225 (253, 1)

290.0 /	2.90298 (154, 1)	2.32603 (154, 1)	2.01608 (335, 1)	1.64918 (335, 1)	.76039 (335, 1)
280.0 /	3.62146 (359, 1)	3.27281C(137, 1)	2.67754C(137, 1)	2.06631C(137, 1)	.89534C(137, 1)
270.0 /	3.14971 (276, 1)	2.79036 (217, 1)	2.35280 (39, 1)	1.85411 (39, 1)	.84646 (39, 1)
260.0 /	3.04025 (89, 1)	2.30835 (304, 1)	1.61728 (304, 1)	1.42171 (15, 1)	.71716 (353, 1)
250.0 /	3.28807 (114, 1)	2.63882 (141, 1)	2.06361 (291, 1)	1.59188 (251, 1)	.69447 (251, 1)
240.0 /	4.04244 (266, 1)	3.13093 (323, 1)	2.52424 (257, 1)	1.94751 (257, 1)	1.02692C(329, 1)
230.0 /	4.36704 (342, 1)	3.30741 (342, 1)	2.43180 (342, 1)	1.74786 (257, 1)	.79059 (257, 1)
220.0 /	3.63936 (38, 1)	2.63758 (38, 1)	1.88896 (300, 1)	1.43968 (311, 1)	.48401 (311, 1)
210.0 /	2.05867 (296, 1)	1.47314 (38, 1)	1.31752C(73, 1)	1.19845C(73, 1)	.53020C(247, 1)
200.0 /	1.41541 (258, 1)	1.41183C(71, 1)	1.27373 (309, 1)	.86927 (309, 1)	.48554C(10, 1)
190.0 /	2.52173 (297, 1)	2.00779C(288, 1)	1.55044C(288, 1)	1.13659C(288, 1)	.44566C(355, 1)
180.0 /	2.56671 (297, 1)	1.83919 (297, 1)	1.42855C(62, 1)	1.02092C(56, 1)	.59868C(56, 1)
170.0 /	1.55755 (11, 1)	1.15315 (11, 1)	.89531C(42, 1)	.69360C(10, 1)	.36165 (353, 1)
160.0 /	2.25292 (59, 1)	1.88485 (26, 1)	1.39427C(8, 1)	.97397C(8, 1)	.34493C(8, 1)
150.0 /	2.10222 (60, 1)	1.60505 (53, 1)	1.21341 (53, 1)	.97708C(224, 1)	.39977 (59, 1)
140.0 /	2.35218 (59, 1)	1.76987C(37, 1)	1.38057C(37, 1)	1.01387C(37, 1)	.50708 (118, 1)
130.0 /	2.24095C(233, 1)	1.85247 (156, 1)	1.54166 (66, 1)	1.31811C(237, 1)	.67628C(237, 1)
120.0 /	3.32520C(234, 1)	2.48737C(234, 1)	1.82826C(234, 1)	1.28663C(234, 1)	.55445C(112, 1)
110.0 /	2.69224C(37, 1)	2.01578 (181, 1)	1.53380C(237, 1)	1.16293C(237, 1)	.47708C(237, 1)
100.0 /	2.36537C(185, 1)	1.76947C(185, 1)	1.30323C(185, 1)	.91999C(185, 1)	.33436C(185, 1)
90.0 /	1.99186C(169, 1)	1.42338C(169, 1)	1.07641C(184, 1)	.90723C(184, 1)	.49511C(50, 1)
80.0 /	1.92266 (84, 1)	1.45012C(73, 1)	1.09113C(73, 1)	.78305C(73, 1)	.37324C(214, 1)
70.0 /	1.57991C(235, 1)	1.37969C(19, 1)	1.27631C(19, 1)	1.07843C(19, 1)	.54081C(19, 1)
60.0 /	1.81164C(74, 1)	1.54079C(74, 1)	1.24695C(74, 1)	.94361C(74, 1)	.41412 (172, 1)
50.0 /	3.05922C(174, 1)	2.44761C(174, 1)	1.89960C(174, 1)	1.41803C(174, 1)	.61383C(174, 1)
40.0 /	2.19871 (99, 1)	1.62868 (128, 1)	1.29098 (58, 1)	.92088 (58, 1)	.39240C(235, 1)
30.0 /	2.39149C(18, 1)	1.86386C(18, 1)	1.41168C(18, 1)	1.01894C(18, 1)	.37906 (47, 1)
20.0 /	1.86727 (264, 1)	1.41599 (3, 1)	1.26606C(333, 1)	1.05990C(333, 1)	.52925C(333, 1)
10.0 /	1.74386 (4, 1)	1.48154 (363, 1)	1.09536 (363, 1)	.77837 (4, 1)	.37072 (4, 1)
360.0 /	2.20249C(239, 1)	1.80219C(364, 1)	1.43743C(265, 1)	1.05380C(364, 1)	.40844C(364, 1)

RUN ENDED ON 08-23-90 AT 17:53:25

1 ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)

SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
RUN BEGAN ON 10-19-90 AT 10:43:13

1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION) WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	1
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	1
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	2
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	1
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	0
NUMBER OF INPUT SOURCES	NSOURC =	1
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS =	10
NUMBER OF Y (THETA) GRID VALUES	NYPNTS =	36
NUMBER OF DISCRETE RECEPTORS	NXWYPT =	0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =	.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR =	10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET =	9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY =	.000000E+00
SURFACE STATION NO.	ISS =	12842

```
     YEAR OF SURFACE DATA                                              ISY = 82
     UPPER AIR STATION NO.                                             IUS = 12842
     YEAR OF UPPER AIR DATA                                            IUY = 82
     ALLOCATED DATA STORAGE                                          LIMIT = 43500 WORDS
     REQUIRED DATA STORAGE FOR THIS PROBLEM RUN                      MIMIT =  8613 WORDS
1
               *** IWTS Case 2 (1,000 acfm) -- 1982                          ***

                          *** METEOROLOGICAL DAYS TO BE PROCESSED ***
                                          (IF=1)

  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                       (METERS/SEC)

                              1.54,   3.09,   5.14,   8.23,  10.80,

                              *** WIND PROFILE EXPONENTS ***

    STABILITY                                WIND SPEED CATEGORY
    CATEGORY          1              2              3              4              5              6
       A         .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01
       B         .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01
       C         .10000E+00     .10000E+00     .10000E+00     .10000E+00     .10000E+00     .10000E+00
       D         .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00
       E         .35000E+00     .35000E+00     .35000E+00     .35000E+00     .35000E+00     .35000E+00
       F         .55000E+00     .55000E+00     .55000E+00     .55000E+00     .55000E+00     .55000E+00

                        *** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
                                  (DEGREES KELVIN PER METER)

    STABILITY                                WIND SPEED CATEGORY
    CATEGORY          1              2              3              4              5              6
       A         .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
       B         .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
       C         .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
       D         .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
       E         .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01
       F         .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01
1
               *** IWTS Case 2 (1,000 acfm) -- 1982                          ***

           X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (      0.,      0.)

                              *** RANGES OF POLAR GRID SYSTEM ***
                                          (METERS)
```

```
     185.0,      241.0,      315.0,      426.0,      555.0,      722.0,      962.0,     1258.0,     1665.0,     6000.0,
```

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

```
     360.0,       10.0,       20.0,       30.0,       40.0,       50.0,       60.0,       70.0,       80.0,       90.0,
     100.0,      110.0,      120.0,      130.0,      140.0,      150.0,      160.0,      170.0,      180.0,      190.0,
     200.0,      210.0,      220.0,      230.0,      240.0,      250.0,      260.0,      270.0,      280.0,      290.0,
     300.0,      310.0,      320.0,      330.0,      340.0,      350.0,
```

1

*** IWTS Case 2 (1,000 acfm) -- 1982   ***

*** SOURCE DATA ***

```
                  EMISSION RATE                                              TEMP.     EXIT VEL.
                     TYPE=0,1                                                TYPE=0     TYPE=0
           T W    (GRAMS/SEC)                                               (DEG.K);  (M/SEC);            BLDG.     BLDG.     BLDG.
           Y A NUMBER  TYPE=2                                  BASE         VERT.DIM  HORZ.DIM DIAMETER  HEIGHT    LENGTH     WIDTH
  SOURCE P K  PART.  (GRAMS/SEC)       X          Y          ELEV.    HEIGHT   TYPE=1   TYPE=1,2  TYPE=0   TYPE=0    TYPE=0    TYPE=0
  NUMBER E E  CATS. *PER METER**2 (METERS) (METERS) (METERS) (METERS) (METERS) (METERS) (METERS) (METERS) (METERS) (METERS)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

      1 0 0    0    .10000E+01        .0         .0        .0     30.48   293.15       1.62       .61       .00       .00       .00
* CALM HOURS (=1) FOR DAY   1 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY   6 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  0
* CALM HOURS (=1) FOR DAY   7 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  0
* CALM HOURS (=1) FOR DAY   8 *  1  0  1  0  0  0  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY   9 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  10 *  0  0  0  1  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  16 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1  1
* CALM HOURS (=1) FOR DAY  17 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY  18 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  1
* CALM HOURS (=1) FOR DAY  19 *  1  1  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  1
* CALM HOURS (=1) FOR DAY  20 *  0  0  0  1  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  21 *  0  0  0  0  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  0
* CALM HOURS (=1) FOR DAY  22 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0
* CALM HOURS (=1) FOR DAY  25 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  1  0
* CALM HOURS (=1) FOR DAY  35 *  1  0  1  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  37 *  0  0  1  1  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  41 *  1  0  0  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  42 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  49 *  1  0  1  0  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  50 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
* CALM HOURS (=1) FOR DAY  51 *  1  0  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  54 *  0  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
* CALM HOURS (=1) FOR DAY  55 *  1  1  0  0  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1
* CALM HOURS (=1) FOR DAY  56 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  61 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  62 *  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  63 *  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY  65 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
* CALM HOURS (=1) FOR DAY  70 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
* CALM HOURS (=1) FOR DAY  71 *  0  1  0  0  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
* CALM HOURS (=1) FOR DAY  72 *  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  73 *  0  0  0  1  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0
* CALM HOURS (=1) FOR DAY  74 *  0  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
```

* CALM HOURS (=1) FOR DAY 75 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 76 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 77 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 101 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 104 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 108 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 112 *	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 117 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 129 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 132 *	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 134 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 135 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 136 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 137 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 161 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 168 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 170 *	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 171 *	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 175 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 176 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 177 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 180 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 183 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 184 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 185 *	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 186 *	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 187 *	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 188 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 189 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 190 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 197 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 198 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 199 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 200 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 201 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 204 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 207 *	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 209 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 210 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 211 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 212 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 213 *	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 214 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 216 *	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 221 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 222 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 223 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 224 *	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 225 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 226 *	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

* CALM HOURS (=1) FOR DAY 228 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 232 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 233 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 236 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 239 *	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 245 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 247 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 256 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 260 *	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 261 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 262 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 263 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 265 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 268 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 269 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 270 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 284 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 288 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 289 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1
* CALM HOURS (=1) FOR DAY 290 *	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 317 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 319 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 326 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 327 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 328 *	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 334 *	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 345 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 356 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 365 *	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

1

'N'-DAY
365 DAYS
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.34703 AND OCCURRED AT (555.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0	722.0	962.0	1258.0	1665.0
350.0 /	.39082	.48811	.52789	.51115	.45606	.38083	.29303	.21878	.15694
340.0 /	.41109	.53014	.59083	.58828	.53650	.45647	.35665	.26842	.19332
330.0 /	.46044	.58915	.66190	.66812	.61387	.52416	.41095	.31134	.22646
320.0 /	.52721	.68794	.79610	.83806	.80410	.71953	.59277	.46666	.35067
310.0 /	.54603	.72709	.85689	.91570	.88699	.80183	.66996	.53582	.40960
300.0 /	.50162	.67964	.80701	.87598	.87463	.82748	.73114	.61303	.48891
290.0 /	.42514	.57187	.68065	.74773	.75574	.71895	.63274	.52473	.41256
280.0 /	.44845	.62646	.77954	.88151	.89320	.83919	.72504	.59254	.46053
270.0 /	.52983	.75283	.92474	1.00707	.98218	.89549	.76143	.62250	.48801
260.0 /	.56627	.79413	.96799	1.04465	1.00694	.90348	.75272	.60427	.46588
250.0 /	.60876	.86749	1.09033	1.22175	1.21292	1.11437	.94560	.76724	.59543
240.0 /	.60268	.88112	1.14723	1.32991	1.34703	1.25020	1.06345	.86062	.66470
230.0 /	.47999	.68483	.87612	1.00592	1.01794	.94963	.81639	.66834	.52283
220.0 /	.34739	.49164	.62764	.71715	.71813	.65766	.54999	.43756	.33212
210.0 /	.23554	.31660	.37646	.39767	.37372	.32399	.25847	.19947	.14800
200.0 /	.19032	.25307	.29800	.31248	.29260	.25439	.20642	.16406	.12666
190.0 /	.16415	.22252	.27349	.30485	.30326	.27884	.23555	.18879	.14412
180.0 /	.14374	.20178	.26286	.30865	.31525	.29528	.25480	.20956	.16465
170.0 /	.12029	.16239	.20475	.23409	.23436	.21504	.18172	.14739	.11482
160.0 /	.10574	.14223	.18822	.22738	.23589	.22222	.19106	.15568	.12064
150.0 /	.12439	.16962	.22974	.27987	.28803	.26805	.22820	.18570	.14435
140.0 /	.17969	.23757	.29993	.34657	.35086	.32584	.27787	.22575	.17500
130.0 /	.25794	.33481	.39077	.41183	.39427	.35836	.30821	.25650	.20496
120.0 /	.31368	.40616	.45299	.44952	.40982	.35238	.28247	.21969	.16428
110.0 /	.37422	.49440	.54714	.52736	.46390	.38181	.29024	.21480	.15294
100.0 /	.47016	.61832	.67077	.62558	.53198	.42218	.30798	.21983	.15101
90.0 /	.55961	.70432	.72721	.64036	.51832	.39443	.27843	.19538	.13321
80.0 /	.65907	.79156	.78129	.65929	.51917	.38797	.26978	.18620	.12430
70.0 /	.74348	.86580	.83360	.68717	.53095	.39099	.26965	.18617	.12507
60.0 /	.73295	.84748	.82057	.68820	.54219	.40824	.28932	.20542	.14223
50.0 /	.66284	.78540	.78212	.67802	.55030	.42616	.31055	.22530	.15912
40.0 /	.57917	.70421	.73028	.66587	.56089	.44353	.32461	.23414	.16356
30.0 /	.49346	.60248	.63669	.60034	.52339	.42746	.32137	.23513	.16533
20.0 /	.43113	.52720	.55456	.51653	.44288	.35435	.26019	.18679	.12917
10.0 /	.42208	.50786	.51768	.46349	.38691	.30596	.22532	.16355	.11490
360.0 /	.42376	.51549	.53960	.50257	.43436	.35445	.26908	.20034	.14404

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'N'-DAY
365 DAYS
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.34703 AND OCCURRED AT (555.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 6000.0

350.0 /	.02760
340.0 /	.03362
330.0 /	.04124
320.0 /	.06853
310.0 /	.08477
300.0 /	.11235
290.0 /	.08928
280.0 /	.09783
270.0 /	.10769
260.0 /	.09884
250.0 /	.12735
240.0 /	.14068
230.0 /	.11501
220.0 /	.06658
210.0 /	.02839
200.0 /	.02820
190.0 /	.02913
180.0 /	.03657
170.0 /	.02537
160.0 /	.02501
150.0 /	.03058
140.0 /	.03682
130.0 /	.04819
120.0 /	.03189
110.0 /	.02638
100.0 /	.02325
90.0 /	.02076
80.0 /	.01743
70.0 /	.01847
60.0 /	.02307
50.0 /	.02792
40.0 /	.02719
30.0 /	.02706
20.0 /	.02040
10.0 /	.01949
360.0 /	.02581

1

HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	56.26584 (205, 9)	58.71916 (205, 9)	52.56768 (210, 9)	46.87679 (264, 9)	48.90698 (117, 7)
340.0 /	48.08707 (145,11)	65.18030 (1,10)	79.84998 (1,10)	73.19141 (1,10)	62.01550 (209,10)
330.0 /	57.80117 (262,13)	60.14218 (94,15)	52.56769 (148, 8)	46.83890 (148, 8)	50.38073 (231, 1)
320.0 /	58.88422 (177,11)	62.97420 (175, 8)	77.07595 (175, 8)	70.54802 (175, 8)	55.31388 (175, 8)
310.0 /	72.13986 (130,15)	77.32461 (130,15)	65.90645 (130,15)	57.00690 (344,14)	50.38073 (101, 8)
300.0 /	58.42186 (222,12)	65.18034 (179, 8)	79.85001 (179, 8)	73.19146 (179, 8)	57.47264 (179, 8)

290.0 /	73.16734 (352,16)	78.44463 (352,16)	66.89127 (352,16)	54.28041 (241, 9)	62.01545 (1, 1)
280.0 /	52.17219 (62,12)	54.37180 (62,12)	60.56815 (18,10)	54.28046 (18,10)	55.72231 (307, 7)
270.0 /	54.43970 (327,11)	62.97424 (200,19)	77.07597 (200,19)	70.54804 (200,19)	55.31389 (200,19)
260.0 /	68.16158 (175, 9)	72.99063 (175, 9)	79.84999 (19,10)	73.19144 (19,10)	57.47262 (19,10)
250.0 /	65.74294 (138,14)	66.26295 (175, 9)	66.88474 (77, 8)	60.87093 (77, 8)	73.18961 (209, 7)
240.0 /	75.73080 (138,14)	75.49068 (365,11)	72.65874 (207, 9)	66.34687 (207, 9)	62.01553 (55, 9)
230.0 /	72.13985 (264,12)	77.32469 (264,12)	65.92841 (264,12)	54.28049 (35,16)	62.01553 (64,19)
220.0 /	73.16737 (259,17)	78.44465 (259,17)	72.65886 (197,17)	66.34697 (197,17)	51.88993 (197,17)
210.0 /	73.16735 (206,18)	78.44465 (206,18)	66.89129 (206,18)	47.18724 (206,18)	44.73639 (42, 8)
200.0 /	70.45694 (203, 9)	75.49070 (203, 9)	64.29486 (203, 9)	54.28049 (104, 9)	42.09252 (104, 9)
190.0 /	58.69664 (355,12)	62.20236 (203, 9)	57.10078 (77, 9)	51.05003 (77, 9)	48.88140 (42, 5)
180.0 /	58.42184 (203,16)	61.01117 (203,16)	52.56787 (259,10)	50.49449 (62,23)	62.01548 (62,23)
170.0 /	48.64294 (49,11)	52.84330 (85, 8)	62.74566 (85, 8)	56.31309 (85, 8)	48.88144 (42, 7)
160.0 /	58.42184 (208,12)	61.01117 (208,12)	72.66182 (264,11)	66.54536 (264,11)	53.33411 (264,11)
150.0 /	56.86724 (223,14)	58.71914 (365,13)	49.20690 (365,13)	50.49448 (265,19)	62.01546 (265,19)
140.0 /	70.25697 (137,13)	59.45720 (138,18)	72.65886 (138,18)	66.34698 (138,18)	51.88994 (138,18)
130.0 /	73.63778 (137,13)	72.99063 (148,10)	77.07591 (187, 8)	70.54800 (187, 8)	55.31384 (187, 8)
120.0 /	68.16159 (179, 9)	72.99066 (179, 9)	62.09996 (179, 9)	45.89366 (171, 9)	35.41665 (171, 9)
110.0 /	58.42185 (264,13)	61.01118 (264,13)	52.73214 (259,18)	50.50157 (37, 8)	62.20662 (37, 8)
100.0 /	48.64294 (55,12)	65.18031 (265,18)	79.84998 (265,18)	73.19143 (265,18)	62.01552 (60, 1)
90.0 /	70.45692 (18,11)	75.49068 (18,11)	64.29485 (18,11)	56.31311 (209,18)	48.90697 (254,18)
80.0 /	58.24089 (18,11)	62.97424 (229,18)	77.07597 (229,18)	70.54805 (229,18)	56.72528 (150, 9)
70.0 /	63.12291 (234,11)	52.84332 (8,13)	62.74569 (8,13)	56.31312 (8,13)	43.73467 (8,13)
60.0 /	76.26174 (234,11)	60.96832 (234,11)	63.48824 (25,16)	57.00690 (25,16)	50.38073 (307,12)
50.0 /	73.63779 (184,12)	65.93213 (64,15)	80.79599 (64,15)	74.09372 (64,15)	58.21022 (64,15)
40.0 /	54.43973 (208,10)	65.18029 (42,12)	79.84997 (42,12)	73.19141 (42,12)	57.47260 (42,12)
30.0 /	73.51281 (270,14)	78.82128 (270,14)	67.22256 (270,14)	47.43199 (270,14)	48.90697 (251,16)
20.0 /	58.47612 (191,12)	65.18029 (8,11)	79.84996 (8,11)	73.19141 (8,11)	57.47419 (8,11)
10.0 /	74.85272 (110,11)	66.26290 (238,17)	56.20546 (238,17)	42.28864 (209, 8)	48.90696 (319, 4)
360.0 /	72.13989 (223,11)	77.32464 (223,11)	77.07596 (247,10)	70.54803 (247,10)	55.31388 (247,10)

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HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	46.83582 (117, 7)	38.03939 (117, 7)	28.78790 (117, 7)	22.56011 (63,23)	9.94774 (63,23)
340.0 /	60.49758 (209,10)	49.77717 (209,10)	37.92097 (209,10)	28.26378 (117, 6)	12.17322 (73,24)
330.0 /	48.30764 (231, 1)	39.29421 (231, 1)	32.00989 (345, 6)	31.06706 (161, 3)	12.56258 (161, 3)
320.0 /	42.68113 (154, 1)	35.84994 (33,22)	32.00989 (33,22)	27.58926 (49, 6)	10.42917 (263, 7)
310.0 /	48.30764 (101, 8)	43.55692 (255,21)	39.21799 (255,21)	31.83635 (255,21)	11.43540 (21, 4)
300.0 /	48.30764 (64, 2)	39.29422 (64, 2)	32.00989 (197, 6)	31.06706 (148, 1)	12.56258 (148, 1)
290.0 /	60.49754 (1, 1)	49.77713 (1, 1)	39.21801 (224, 7)	31.83637 (224, 7)	11.32963 (22, 3)
280.0 /	59.75417 (307, 7)	54.09521 (307, 7)	44.15411 (307, 7)	34.41589 (307, 7)	12.56258 (162,24)
270.0 /	48.30764 (259, 9)	39.29421 (259, 9)	32.65028 (184, 6)	26.51658 (299, 8)	11.87083 (76, 2)
260.0 /	58.76601 (127, 6)	51.11565 (127, 6)	40.72602 (127, 6)	31.26228 (127, 6)	12.56259 (222, 5)
250.0 /	72.55012 (209, 7)	61.24645 (209, 7)	48.75353 (209, 7)	37.87658 (209, 7)	11.91550 (209, 7)
240.0 /	60.49759 (55, 9)	49.77717 (55, 9)	37.92097 (55, 9)	31.06706 (344,21)	12.56258 (344,21)
230.0 /	60.49760 (64,19)	49.77719 (64,19)	37.92097 (64,19)	31.06706 (208, 2)	12.56258 (208, 2)
220.0 /	46.83578 (150,10)	43.55688 (197,22)	39.21796 (197,22)	31.83632 (197,22)	9.18407 (1,23)

210.0 /	42.68095 (42, 8)	46.17183 (182, 6)	41.68678 (182, 6)	33.94676 (182, 6)	9.48160 (256, 5)
200.0 /	36.55104 (225,20)	35.84994 (111, 1)	32.00989 (111, 1)	25.85986 (111, 1)	10.81805 (10, 3)
190.0 /	47.21004 (42, 5)	38.37691 (42, 5)	28.87262 (42, 5)	26.86547 (222,23)	10.42907 (222,23)
180.0 /	60.49756 (62,23)	49.77715 (62,23)	39.21787 (229,20)	31.83625 (229,20)	12.56258 (258,24)
170.0 /	47.21008 (42, 7)	38.37693 (42, 7)	28.87264 (42, 7)	20.47726 (42, 7)	10.72341 (353, 5)
160.0 /	48.30764 (8,18)	39.29421 (8,18)	30.11422 (202,20)	24.25219 (202,20)	7.87133 (92,21)
150.0 /	60.49754 (265,19)	49.77714 (265,19)	37.92093 (265,19)	27.27819 (265,19)	10.42905 (174,23)
140.0 /	46.83582 (183, 7)	38.03939 (183, 7)	28.78791 (183, 7)	22.56012 (118, 2)	9.94775 (118, 2)
130.0 /	42.68103 (321,17)	34.50779 (321,17)	28.19652 (169,22)	31.06705 (169,22)	12.56259 (169,22)
120.0 /	39.28751 (318,18)	43.55687 (318,18)	39.21795 (318,18)	31.83632 (318,18)	9.48160 (183, 5)
110.0 /	61.88473 (37, 8)	54.43033 (37, 8)	45.21393 (37, 8)	36.18605 (37, 8)	11.46523 (37, 8)
100.0 /	60.49760 (60, 1)	49.77719 (60, 1)	37.92097 (60, 1)	27.27822 (60, 1)	7.87137 (165, 3)
90.0 /	46.83580 (254,18)	38.03938 (254,18)	28.78790 (254,18)	31.06706 (213, 2)	12.56258 (213, 2)
80.0 /	55.12969 (150, 9)	45.15524 (150, 9)	34.23904 (150, 9)	26.25644 (235, 8)	7.87136 (214, 2)
70.0 /	36.55114 (307,13)	29.32854 (307,13)	21.91929 (307,13)	20.81208 (235, 1)	7.87139 (235, 1)
60.0 /	48.30764 (307,12)	39.29422 (307,12)	29.78409 (307,12)	26.86539 (165, 1)	10.42903 (165, 1)
50.0 /	46.83578 (215, 7)	38.03936 (215, 7)	32.00989 (174, 5)	26.86553 (185, 2)	10.42910 (185, 2)
40.0 /	46.83578 (227, 8)	38.03936 (227, 8)	28.78789 (227, 8)	22.56004 (81, 5)	9.94770 (81, 5)
30.0 /	46.83579 (251,16)	38.03937 (251,16)	32.00989 (64, 1)	25.85987 (64, 1)	9.48160 (316,20)
20.0 /	48.30764 (63,11)	39.29421 (63,11)	29.78409 (63,11)	26.86545 (333,19)	10.42907 (333,19)
10.0 /	50.29784 (4, 8)	44.95116 (4, 8)	36.46145 (4, 8)	28.34744 (4, 8)	10.42907 (59, 2)
360.0 /	48.30764 (4,16)	39.29421 (4,16)	29.78409 (4,16)	26.86558 (59, 1)	10.42913 (59, 1)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 77.32462 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	54.18764 (223,11)	57.80340 (223,11)	51.76293 (6,13)	46.83887 (210, 9)	48.90695 (240, 8)
340.0 /	46.85177 (137,15)	52.84331 (16,15)	62.74567 (16,15)	56.31310 (16,15)	57.47261 (1,10)
330.0 /	57.60460 (94,15)	50.27267 (153,12)	52.37512 (188, 8)	46.45888 (188, 8)	48.90700 (110, 7)
320.0 /	58.42184 (140,10)	61.01118 (140,10)	63.48824 (212, 8)	57.00690 (212, 8)	44.73655 (154, 1)
310.0 /	58.42186 (19,12)	61.01119 (19,12)	63.48824 (344,14)	54.47163 (205, 8)	48.90693 (16,11)
300.0 /	54.43974 (284,11)	61.01120 (222,12)	63.48824 (356,15)	57.00690 (356,15)	50.38073 (64, 2)
290.0 /	58.69664 (50,11)	61.30341 (50,11)	60.56810 (241, 9)	50.49446 (1, 1)	50.38073 (75, 8)
280.0 /	52.17219 (259,14)	54.37180 (259,14)	52.37512 (352,15)	46.45888 (352,15)	48.90702 (206, 7)
270.0 /	49.51910 (260,14)	56.77909 (327,11)	66.88469 (219,16)	60.87088 (219,16)	50.38073 (259, 9)
260.0 /	54.43972 (260,14)	65.18031 (19,10)	62.74569 (50,10)	56.31311 (50,10)	56.50573 (127, 6)
250.0 /	61.97806 (175, 9)	62.20239 (365,11)	60.11138 (130,18)	58.54032 (209, 7)	50.38074 (141, 7)
240.0 /	70.45691 (365,11)	61.30341 (261,10)	64.29485 (365,11)	56.31310 (328,11)	51.88985 (207, 9)
230.0 /	70.45692 (72,11)	75.49068 (72,11)	64.29485 (72,11)	51.04995 (51,11)	48.88131 (42, 2)
220.0 /	61.97807 (224,10)	66.26297 (224,10)	66.89129 (259,17)	54.28049 (321,15)	48.90695 (150,10)
210.0 /	68.16156 (224,10)	72.99063 (224,10)	62.09994 (224,10)	46.83894 (82, 9)	40.43168 (247, 9)
200.0 /	57.60456 (118, 9)	60.14214 (118, 9)	60.56818 (104, 9)	46.83894 (327,10)	38.55257 (225,20)
190.0 /	58.47611 (130,14)	61.30341 (355,12)	52.65693 (203, 9)	40.15725 (42, 5)	44.73639 (77, 5)
180.0 /	50.79671 (130,14)	50.03335 (77,10)	51.19121 (203,16)	46.83904 (259,10)	48.90693 (42,11)
170.0 /	47.96397 (17,14)	50.03335 (49,11)	51.76292 (200,16)	45.89364 (200,16)	43.73466 (85, 8)
160.0 /	54.26801 (223,14)	59.45718 (264,11)	51.19121 (208,12)	42.15454 (8,18)	50.38073 (8,18)
150.0 /	56.26583 (365,13)	50.27267 (209,12)	45.14115 (264,11)	40.54862 (264,11)	44.73642 (84, 8)
140.0 /	70.25697 (240,14)	56.09760 (137,13)	51.76293 (255,16)	45.89365 (255,16)	48.90699 (183, 7)

130.0 /	73.63778 (240,14)	66.26292 (179, 9)	62.09994 (148,10)	44.23771 (108, 9)	44.73645 (321,17)
120.0 /	61.97807 (148,10)	66.26297 (148,10)	56.20551 (148,10)	43.65410 (179, 9)	31.87334 (318,16)
110.0 /	48.87123 (239,16)	50.27267 (239,16)	51.19148 (264,13)	47.53334 (259,18)	44.73649 (197,16)
100.0 /	47.96399 (144,16)	54.85107 (259,18)	66.88472 (259,18)	60.87091 (259,18)	57.47262 (265,18)
90.0 /	56.26581 (269,13)	58.71912 (269,13)	62.74569 (209,18)	45.27108 (18,11)	44.73647 (187,10)
80.0 /	54.43971 (206,10)	62.20238 (18,11)	52.65696 (18,11)	46.34180 (150, 9)	55.31390 (229,18)
70.0 /	57.80119 (206,11)	51.05801 (270,17)	60.56819 (270,17)	54.28049 (270,17)	42.09253 (270,17)
60.0 /	76.26173 (112,11)	60.96831 (112,11)	62.74567 (208, 8)	56.31310 (208, 8)	48.90691 (185, 8)
50.0 /	63.12295 (112,11)	58.83907 (184,12)	52.37512 (164, 8)	46.45888 (164, 8)	48.90696 (215, 7)
40.0 /	54.43970 (54,15)	56.77911 (208,10)	63.48824 (233,10)	57.00690 (233,10)	48.90696 (227, 8)
30.0 /	58.69662 (140,15)	61.30342 (140,15)	52.56778 (267,16)	46.83897 (267,16)	44.73642 (6,17)
20.0 /	50.91882 (110,11)	53.45171 (224, 9)	63.48824 (224, 9)	57.00690 (224, 9)	50.38073 (63,11)
10.0 /	61.97801 (238,17)	66.26290 (239,10)	56.20546 (239,10)	41.91771 (282,16)	47.51957 (4, 8)
360.0 /	72.13988 (195,12)	77.32462 (195,12)	72.65878 (64,18)	66.34690 (64,18)	51.88988 (64,18)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 77.32462 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	46.83577 (240, 8)	38.03936 (240, 8)	28.78788 (240, 8)	20.95541 (166,21)	7.40501 (117, 4)
340.0 /	48.30764 (239, 8)	39.29421 (239, 8)	33.12520 (117, 6)	27.64750 (73,24)	7.00320 (117, 6)
330.0 /	46.83582 (110, 7)	38.03940 (110, 7)	30.11429 (205, 2)	25.85986 (345, 6)	9.53424 (8, 2)
320.0 /	42.68113 (319, 2)	35.84994 (238,23)	32.00989 (238,23)	26.86566 (263, 7)	10.42906 (176,23)
310.0 /	46.83576 (16,11)	39.29422 (101, 8)	30.11422 (143, 2)	26.86565 (156, 2)	10.42917 (156, 2)
300.0 /	46.83584 (63, 8)	38.03942 (63, 8)	32.00989 (279, 1)	31.06706 (190,23)	12.56258 (190,23)
290.0 /	48.30764 (75, 8)	43.55693 (224, 7)	39.21785 (171, 6)	31.83622 (171, 6)	9.53421 (21, 6)
280.0 /	46.83585 (206, 7)	38.03942 (206, 7)	32.65026 (252, 6)	31.06706 (162,24)	10.42919 (165,24)
270.0 /	46.83578 (71,10)	38.03936 (71,10)	32.00989 (259,20)	26.25642 (184, 6)	11.60824 (7, 3)
260.0 /	42.68093 (16, 9)	36.56285 (307, 3)	32.65030 (307, 3)	31.06705 (222, 5)	10.74714 (353, 7)
250.0 /	48.30764 (141, 7)	39.29421 (141, 7)	30.11428 (345, 1)	24.25224 (345, 1)	11.54912 (71, 3)
240.0 /	48.30764 (63, 1)	39.29421 (63, 1)	32.00989 (305, 2)	27.27822 (55, 9)	11.98274 (22,21)
230.0 /	47.20994 (42, 2)	38.37682 (42, 2)	32.65012 (56,19)	27.64750 (1,21)	12.17322 (1,21)
220.0 /	39.28751 (197,22)	38.03936 (150,10)	30.11429 (108,22)	24.25225 (108,22)	7.87135 (282,21)
210.0 /	41.53460 (182, 6)	43.55687 (247, 8)	39.21796 (247, 8)	31.83632 (247, 8)	8.97962 (73, 1)
200.0 /	32.91666 (111, 1)	29.32845 (225,20)	23.02393 (62, 8)	20.81193 (245,22)	9.53420 (20,21)
190.0 /	42.68096 (77, 5)	34.50773 (77, 5)	25.99288 (77, 5)	20.47724 (42, 5)	8.53178 (355,20)
180.0 /	46.83576 (42,11)	43.55678 (229,20)	37.92094 (62,23)	31.06706 (258,24)	12.17322 (56,21)
170.0 /	34.90969 (17,17)	28.38984 (214, 6)	25.07144 (214, 6)	20.00174 (214, 6)	8.50417 (25,22)
160.0 /	42.68099 (8,17)	34.50775 (8,17)	29.78409 (8,18)	21.36326 (8,18)	7.64232 (240,21)
150.0 /	42.68100 (84, 8)	34.50777 (84, 8)	25.99290 (84, 8)	26.86542 (174,23)	7.87134 (236,22)
140.0 /	46.83577 (60, 2)	38.03935 (60, 2)	28.78787 (60, 2)	20.95541 (212, 5)	7.64232 (161,24)
130.0 /	39.60269 (187, 8)	30.88030 (99,20)	28.19652 (246,22)	31.06705 (246,22)	12.56259 (246,22)
120.0 /	31.13617 (234,21)	33.81981 (234,21)	30.11428 (234,21)	24.25225 (234,21)	9.18407 (112, 2)
110.0 /	42.68106 (197,16)	34.50782 (197,16)	29.66044 (16,18)	26.13668 (16,18)	8.90693 (118, 3)
100.0 /	46.83580 (8,16)	38.03937 (8,16)	32.65032 (239,19)	26.25646 (239,19)	5.62806 (239,19)
90.0 /	42.68105 (187,10)	34.50780 (187,10)	28.19652 (213, 2)	26.86553 (184,24)	11.60824 (50,20)
80.0 /	47.20999 (1, 9)	38.37687 (1, 9)	32.65030 (235, 8)	24.49928 (150, 9)	6.34445 (7,19)
70.0 /	31.15342 (8,13)	23.80938 (237, 9)	20.41068 (19,18)	17.03096 (213, 1)	7.16118 (19,19)
60.0 /	46.83574 (185, 8)	38.03933 (185, 8)	28.78785 (185, 8)	21.36326 (307,12)	7.87135 (172,22)

50.0 /	44.14969 (176, 6)	36.37271 (176, 6)	28.78788 (215, 7)	26.86545 (175,21)	10.42907 (175,21)
40.0 /	42.68096 (278, 1)	34.50772 (278, 1)	25.99287 (278, 1)	20.81202 (235, 5)	8.90693 (288,21)
30.0 /	42.68100 (6,17)	35.84994 (64, 1)	32.00989 (236, 8)	25.85987 (236, 8)	6.38008 (286,23)
20.0 /	42.68099 (43,23)	34.50776 (43,23)	25.99301 (264,16)	21.36326 (63,11)	6.34443 (63,21)
10.0 /	46.83579 (319, 4)	38.03936 (319, 4)	32.00989 (59, 5)	26.86546 (59, 2)	8.56950 (4, 8)
360.0 /	39.60273 (247,10)	31.89888 (116, 8)	25.07154 (58,23)	26.86548 (265, 5)	10.42908 (265, 5)

1

HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 42.28361 AND OCCURRED AT (185.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	28.61112 (160, 4)	31.77907 (153, 5)	28.39723 (153, 5)	21.01348 (153, 5)	17.25549 (231, 2)
340.0 /	26.75487 (104, 4)	28.20641 (220, 4)	26.61666 (1, 4)	24.39714 (1, 4)	23.67836C(76, 3)
330.0 /	31.50478 (221, 4)	35.81410 (221, 4)	32.59016 (221, 4)	26.06822 (160, 3)	22.61246 (363, 3)
320.0 /	35.08430 (64, 4)	39.10048 (64, 4)	34.91504 (64, 4)	25.79263 (64, 4)	20.41274 (80, 3)
310.0 /	34.58548 (19, 4)	35.94571 (20, 4)	36.03252 (20, 4)	29.11220 (20, 4)	21.41040 (205, 3)
300.0 /	26.04290 (135, 4)	27.57161 (134, 4)	27.34803 (134, 4)	24.39715 (179, 3)	21.15774 (155, 2)
290.0 /	30.08170 (137, 4)	30.75296 (137, 4)	25.45988 (137, 4)	21.82928 (135, 3)	28.37919 (1, 1)
280.0 /	33.34705 (158, 4)	32.04090 (39, 5)	35.73877 (137, 3)	36.66583 (137, 3)	33.16579 (137, 3)
270.0 /	39.36218 (158, 4)	36.22356 (158, 4)	30.13319 (200, 7)	31.35484 (200, 7)	27.46038 (200, 7)
260.0 /	30.98526 (61, 5)	31.26996 (61, 5)	30.48382 (12, 4)	24.39715 (19, 4)	21.64330 (50, 3)
250.0 /	34.31764 (267, 4)	36.87525 (35, 5)	33.51302 (35, 5)	28.10701 (122, 4)	24.39654 (209, 3)
240.0 /	31.52714 (262, 4)	32.40042 (262, 4)	29.09388 (123, 3)	25.47368 (274, 3)	26.99527 (8, 8)
230.0 /	38.77946 (260, 4)	41.61887 (260, 4)	37.38184 (260, 4)	27.89227 (260, 4)	26.99068 (343, 4)
220.0 /	34.52514 (72, 4)	36.25660 (72, 4)	30.42487 (72, 4)	22.54793 (256, 4)	25.19407 (312, 3)
210.0 /	25.17921 (206, 6)	26.90486 (206, 6)	22.86477 (206, 6)	16.49647 (38, 5)	22.52476C(247, 3)
200.0 /	23.48565C(203, 3)	25.16357C(203, 3)	23.77717 (288, 3)	23.12362 (288, 3)	19.46523 (288, 3)
190.0 /	29.55916 (118, 4)	27.79062 (118, 4)	24.33500 (44, 5)	23.48206 (77, 2)	28.13556 (77, 2)
180.0 /	27.10124 (77, 4)	27.54253 (77, 4)	25.00707C(355, 4)	20.35621 (38, 1)	23.33615 (38, 1)
170.0 /	34.26134 (77, 4)	34.77952 (77, 4)	28.55587 (77, 4)	19.70936 (85, 3)	16.29382 (42, 3)
160.0 /	23.54230 (77, 4)	23.76850 (77, 4)	24.22061 (264, 4)	26.58484 (8, 6)	31.70572 (8, 6)
150.0 /	20.43390 (223, 5)	19.57305 (365, 5)	16.40230 (365, 5)	24.34217 (84, 3)	28.79541 (84, 3)
140.0 /	33.67251 (240, 5)	29.03054 (240, 5)	25.23703 (283, 4)	25.06171 (183, 3)	24.99343 (183, 3)
130.0 /	35.81319 (240, 5)	30.98738 (240, 5)	25.69197 (187, 3)	23.51600 (187, 3)	23.75652 (153, 8)
120.0 /	22.72053 (179, 3)	24.74618 (240, 6)	24.53368 (240, 6)	19.68273 (240, 6)	19.71064 (234, 7)
110.0 /	20.32530 (264, 5)	24.82515 (130, 6)	24.23511 (130, 6)	21.63500 (36, 6)	21.52238 (36, 6)
100.0 /	30.03885 (135, 5)	28.21633 (135, 5)	26.85775 (238, 4)	24.39714 (265, 6)	20.67184 (60, 1)
90.0 /	35.85961 (225, 5)	36.44549 (225, 5)	30.00135 (225, 5)	23.74566 (254, 6)	24.00135 (254, 6)
80.0 /	39.87673 (206, 4)	37.79515 (206, 4)	41.18962 (229, 6)	35.50877 (229, 6)	26.89361 (229, 6)
70.0 /	35.40607 (206, 4)	35.40135 (20, 5)	33.96798 (328, 5)	29.75786 (270, 6)	27.04105 (8, 5)
60.0 /	36.12576 (112, 4)	37.49091 (246, 4)	35.87736 (246, 4)	28.02545 (246, 4)	20.07115 (246, 4)
50.0 /	29.42168 (179, 4)	29.90397 (179, 4)	31.60036 (64, 5)	28.65913 (64, 5)	22.37306 (64, 5)
40.0 /	28.10107 (18, 5)	33.55561 (18, 5)	31.70085 (18, 5)	24.51523 (18, 5)	19.35398 (93, 7)
30.0 /	26.39565 (194, 4)	27.90084 (18, 5)	30.36829 (1, 5)	26.75840 (1, 5)	20.56003 (1, 5)
20.0 /	40.47812 (194, 4)	37.43450 (194, 4)	28.85562 (194, 4)	25.06665 (264, 6)	29.82428 (264, 6)
10.0 /	40.07045 (110, 4)	38.62291 (195, 4)	31.19595 (195, 4)	22.40235 (239, 4)	18.02016 (350, 3)
360.0 /	42.28361 (195, 4)	40.86216 (195, 4)	35.18092 (239, 4)	33.59201 (64, 6)	30.77386 (64, 6)

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HIGH
3-HR

SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 42.28361 AND OCCURRED AT (185.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	16.01591 (231, 2)	16.27421 (316, 8)	15.97623 (316, 8)	14.10915 (316, 8)	3.86876 (316, 8)
340.0 /	25.99066C(76, 3)	23.95306C(76, 3)	19.63407C(76, 3)	14.95483C(76, 3)	4.05774C(73, 8)
330.0 /	19.47687 (363, 3)	14.82237 (363, 3)	17.59492 (161, 1)	19.15771 (161, 1)	7.50768 (161, 1)
320.0 /	19.12129 (80, 3)	15.23684 (80, 3)	13.59004C(176, 8)	14.74443C(176, 8)	5.46455C(176, 8)
310.0 /	17.30894 (196, 7)	16.13237 (361, 6)	13.57452 (361, 6)	13.74330 (156, 1)	5.24193 (156, 1)
300.0 /	21.86839 (155, 2)	19.43091 (155, 2)	17.42963 (255, 8)	16.10634 (255, 8)	4.96437 (255, 8)
290.0 /	31.24767 (1, 1)	28.77990 (1, 1)	23.52365 (1, 1)	17.84480 (1, 1)	4.96436C(161, 2)
280.0 /	27.15973 (137, 3)	21.13808 (194, 7)	17.68697 (221, 8)	14.15493 (221, 8)	4.97700 (194, 2)
270.0 /	21.60293 (200, 7)	18.05240 (217, 7)	15.87400 (217, 7)	12.93192 (217, 7)	5.25643 (7, 1)
260.0 /	20.06193 (50, 3)	17.09702 (127, 2)	13.62092 (127, 2)	10.45111 (127, 2)	4.43344 (15, 2)
250.0 /	24.18337 (209, 3)	22.54651 (252, 1)	20.07617 (252, 1)	16.16815 (252, 1)	4.36362 (15, 7)
240.0 /	25.93085 (43, 2)	23.23432 (43, 2)	18.92832 (43, 2)	14.42888 (43, 2)	4.18753 (344, 7)
230.0 /	25.17741 (343, 4)	20.06697 (343, 4)	18.17739 (139, 2)	19.04474 (139, 2)	7.16610 (139, 2)
220.0 /	23.89131 (312, 3)	19.33855 (312, 3)	14.94472 (158, 1)	11.86817 (158, 1)	3.37453 (300, 1)
210.0 /	25.86500C(247, 3)	24.81238C(247, 3)	20.83293C(247, 3)	16.15358C(247, 3)	4.41435 (73, 1)
200.0 /	14.87709 (288, 3)	11.94998 (111, 1)	10.66996 (111, 1)	8.61995 (111, 1)	3.61190 (299, 7)
190.0 /	26.88663 (77, 2)	21.68489 (77, 2)	16.24129 (77, 2)	11.47828 (77, 2)	3.47636 (222, 8)
180.0 /	21.62523 (38, 1)	17.02993 (38, 1)	13.07262C(229, 7)	10.61208C(229, 7)	4.18753 (258, 8)
170.0 /	15.73669 (42, 3)	12.79231 (42, 3)	9.62421 (42, 3)	6.82575 (42, 3)	3.57447 (353, 2)
160.0 /	30.32954 (8, 6)	24.60065 (8, 6)	18.59233 (8, 6)	13.29191 (8, 6)	2.62378 (92, 7)
150.0 /	27.39739 (84, 3)	22.13555 (84, 3)	16.69311 (84, 3)	11.91420 (84, 3)	3.61540C(224, 8)
140.0 /	21.69340 (183, 3)	18.17494 (60, 1)	14.92330 (60, 1)	11.41746 (60, 1)	4.32566 (118, 1)
130.0 /	22.06725 (153, 8)	17.39370 (153, 8)	14.46096 (156, 8)	15.47137 (156, 8)	5.75136 (156, 8)
120.0 /	23.06135 (318, 6)	22.45539 (318, 6)	18.98143 (318, 6)	14.77207 (318, 6)	3.16053C(183, 2)
110.0 /	20.62824C(37, 3)	18.14344C(37, 3)	15.07131C(37, 3)	12.06202C(37, 3)	3.82174C(37, 3)
100.0 /	20.16587 (60, 1)	16.59240 (60, 1)	13.15154 (185, 3)	10.00041 (185, 3)	2.62379 (165, 1)
90.0 /	21.02598 (254, 6)	16.16054 (254, 6)	11.82445 (254, 6)	10.35569C(213, 1)	4.18753C(213, 1)
80.0 /	18.76980 (229, 6)	15.05175 (150, 3)	11.41301 (150, 3)	8.75215C(235, 3)	2.62379 (214, 1)
70.0 /	21.96432 (8, 5)	15.83330 (8, 5)	11.00530 (8, 5)	7.33616 (8, 5)	2.62681C(235, 1)
60.0 /	16.94986 (151, 6)	13.09807 (307, 4)	9.92803 (307, 4)	9.73266 (233, 8)	3.47634 (165, 1)
50.0 /	23.48150 (174, 2)	23.12858 (174, 2)	19.96364 (174, 2)	15.99105 (174, 2)	4.20737 (174, 2)
40.0 /	18.40959 (58, 7)	17.02014 (58, 7)	13.92516 (58, 7)	10.56191 (58, 7)	3.31590 (81, 2)
30.0 /	19.52791 (18, 6)	18.66615 (18, 6)	15.71628 (18, 6)	12.23830 (18, 6)	3.16053 (316, 7)
20.0 /	28.45399 (264, 6)	23.00517 (264, 6)	17.32867 (264, 6)	12.34391 (264, 6)	3.47636C(333, 7)
10.0 /	16.80937 (350, 3)	14.98372 (4, 3)	12.15382 (4, 3)	9.44915 (4, 3)	3.47636 (59, 1)
360.0 /	25.11819 (64, 6)	18.31279 (64, 6)	12.92355 (64, 6)	9.96177 (59, 1)	3.68786 (59, 1)

1

2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 40.15681 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	185.0	241.0	RANGE (METERS) 315.0	426.0	555.0
350.0 /	28.58006 (153, 5)	28.94403 (160, 4)	23.67488 (160, 4)	16.35556 (265, 4)	17.12363 (308, 2)
340.0 /	26.73444 (160, 4)	27.28429 (104, 4)	25.89183 (153, 4)	21.19842 (153, 4)	20.67183 (209, 4)
330.0 /	25.17667 (220, 5)	26.79514 (160, 3)	28.69318 (160, 3)	24.50423 (221, 4)	21.34455 (160, 3)
320.0 /	24.69715 (19, 4)	25.41125 (19, 4)	26.03248 (263, 4)	23.52859 (175, 3)	19.40809 (3, 3)
310.0 /	27.68851 (20, 4)	35.85955 (19, 4)	29.93630 (19, 4)	24.57042 (205, 3)	21.28365 (20, 4)
300.0 /	24.68833 (138, 4)	25.68037 (20, 4)	26.61667 (179, 3)	21.88689 (134, 4)	21.11158 (361, 4)
290.0 /	24.38911 (352, 6)	26.14821 (352, 6)	22.29709 (352, 6)	21.08246 (64, 2)	24.71895 (64, 2)
280.0 /	28.42181 (39, 5)	31.21521 (158, 4)	28.96219 (39, 5)	22.13180 (330, 4)	24.09611 (194, 7)
270.0 /	31.02224 (159, 5)	29.03088 (133, 5)	27.86411 (158, 4)	24.67508 (119, 5)	23.76992 (119, 5)
260.0 /	26.57315 (217, 4)	30.90774 (12, 4)	26.61666 (19, 4)	24.35308 (12, 4)	19.90202 (122, 6)
250.0 /	32.34372 (35, 5)	34.62321 (267, 4)	29.75769 (122, 4)	25.06484 (35, 5)	23.39454 (114, 1)
240.0 /	26.79062 (35, 5)	29.05199 (123, 3)	26.71638 (262, 4)	25.24006 (266, 6)	25.07541 (43, 2)
230.0 /	37.23420 (72, 4)	39.26048 (72, 4)	33.08485 (72, 4)	27.61397 (35, 6)	26.09563 (342, 1)
220.0 /	29.54364 (260, 4)	32.57118 (256, 4)	29.84112 (256, 4)	22.17578 (260, 4)	20.18530 (251, 6)
210.0 /	23.62580 (141, 4)	24.33021 (224, 4)	20.69998 (224, 4)	16.06927 (206, 6)	19.01625 (38, 5)
200.0 /	21.20111 (118, 4)	20.77728 (118, 4)	21.43162C(203, 3)	18.09350 (104, 3)	14.03084 (104, 3)
190.0 /	22.56256C(355, 4)	25.45614C(355, 4)	22.78300C(355, 4)	19.27394 (44, 5)	16.34499C(42, 2)
180.0 /	23.45669 (118, 4)	25.26084C(355, 4)	23.61558 (44, 5)	19.93847C(355, 4)	20.67183 (62, 8)
170.0 /	29.73654 (17, 5)	30.53747 (17, 5)	25.31305 (17, 5)	19.54004 (77, 4)	15.22744 (85, 3)
160.0 /	19.47395 (208, 4)	20.33706 (208, 4)	19.37869 (77, 4)	22.18179 (264, 4)	17.77804 (264, 4)
150.0 /	18.75528 (365, 5)	16.75756 (209, 4)	15.17563 (255, 6)	18.29005 (59, 8)	20.92183 (59, 8)
140.0 /	23.41899 (137, 5)	25.85604 (283, 4)	24.21962 (138, 6)	22.11566 (138, 6)	18.75660 (60, 1)
130.0 /	24.54593 (137, 5)	24.33021 (148, 4)	22.59262 (240, 5)	20.62909 (153, 8)	20.93279 (66, 7)
120.0 /	20.66094 (148, 4)	24.33022 (179, 3)	20.69999 (179, 3)	19.41949 (204, 6)	19.67198 (318, 6)
110.0 /	19.74957 (130, 6)	22.05704 (234, 5)	22.63339 (355, 5)	20.98490 (269, 6)	20.73554C(37, 3)
100.0 /	22.91061 (110, 5)	23.13617 (110, 5)	26.61666 (265, 6)	23.77881 (238, 4)	19.22455 (110, 6)
90.0 /	27.59061 (233, 5)	26.61583 (236, 4)	25.92814 (236, 4)	20.61383 (225, 5)	15.82680 (14, 4)
80.0 /	33.60665 (164, 4)	37.14850 (229, 6)	29.65910 (206, 4)	22.35814 (147, 5)	18.90843 (150, 3)
70.0 /	31.69573 (164, 4)	31.98897 (164, 4)	33.50547 (270, 6)	29.58410 (328, 5)	22.95777 (270, 6)
60.0 /	35.38458 (117, 4)	35.79536 (117, 4)	29.43182 (117, 4)	22.68306 (56, 4)	19.67687 (151, 6)
50.0 /	28.88058 (202, 4)	29.34553 (65, 4)	27.10439 (56, 5)	23.40841 (56, 5)	20.34184 (174, 2)
40.0 /	23.99121 (65, 4)	29.27723 (65, 4)	28.08989 (65, 4)	24.39714 (42, 4)	19.15754 (42, 4)
30.0 /	26.32648 (18, 5)	26.27376 (270, 5)	25.59963 (76, 4)	20.23735 (76, 4)	17.81023 (364, 7)
20.0 /	31.17349 (110, 4)	28.01271 (110, 4)	26.61665C(8, 4)	24.39714C(8, 4)	23.83291 (63, 4)
10.0 /	38.91549 (195, 4)	35.47112 (110, 4)	30.96872 (239, 4)	20.91285 (195, 4)	16.30232C(319, 2)
360.0 /	36.50764 (239, 4)	40.15681 (239, 4)	32.50436 (195, 4)	27.55009 (110, 3)	25.49085 (110, 3)

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2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 40.15681 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	722.0	962.0	RANGE (METERS) 1258.0	1665.0	6000.0
350.0 /	15.94864 (308, 2)	13.69381 (264, 7)	11.23452 (264, 7)	8.53720 (264, 7)	3.31591C(63, 8)
340.0 /	20.16586 (209, 4)	16.59239 (209, 4)	12.64032 (209, 4)	9.42126 (117, 2)	2.96677C(76, 3)

330.0 /	18.56064 (350, 1)	14.73833 (350, 1)	12.75128 (345, 2)	10.14968 (345, 2)	3.17808C(8, 1)
320.0 /	17.79768 (128, 3)	15.13904 (155, 8)	12.81791 (83, 8)	12.78022 (210, 1)	4.61693 (210, 1)
310.0 /	16.72704 (205, 3)	15.37793 (196, 7)	13.07266 (255, 7)	10.61212 (255, 7)	3.83334 (194, 1)
300.0 /	19.55810 (361, 4)	17.15224 (210, 7)	15.84040 (155, 2)	12.23158 (155, 2)	4.56410 (75, 2)
290.0 /	23.34752 (64, 2)	20.47683 (189, 7)	17.42959C(161, 2)	16.10630C(161, 2)	3.77655C(22, 1)
280.0 /	24.47499 (194, 7)	19.96061 (137, 3)	16.65587 (194, 7)	13.44012 (194, 2)	4.73862 (187, 2)
270.0 /	20.16705 (119, 5)	16.86969 (277, 2)	14.78903 (348, 8)	12.51044 (348, 8)	5.24273C(327, 2)
260.0 /	19.64561 (127, 2)	15.90607 (50, 3)	12.54379 (329, 3)	10.35623 (222, 2)	4.18754 (222, 2)
250.0 /	21.70317 (114, 1)	20.41548 (209, 3)	16.25118 (209, 3)	12.62553 (209, 3)	3.97183 (209, 3)
240.0 /	25.20851 (8, 8)	20.03411 (8, 8)	14.92171 (8, 8)	10.87938 (262, 8)	3.99425C(22, 7)
230.0 /	24.43245 (342, 1)	19.48291 (342, 1)	15.76085 (267, 1)	12.76249 (305, 2)	4.21168 (67, 7)
220.0 /	18.91681 (251, 6)	17.09133 (158, 1)	14.75893 (312, 3)	10.83990 (312, 3)	3.06136C(1, 8)
210.0 /	17.79744 (38, 5)	15.39061 (182, 2)	13.89559 (182, 2)	11.31559 (182, 2)	3.33542C(247, 3)
200.0 /	12.67969C(225, 7)	10.25459 (288, 3)	7.69611 (62, 3)	7.83264 (299, 7)	3.60602 (10, 1)
190.0 /	15.77550C(42, 2)	12.81586C(42, 2)	9.63731C(42, 2)	8.95516 (222, 8)	3.22843 (352, 1)
180.0 /	20.16585 (62, 8)	16.59238 (62, 8)	12.64031 (62, 8)	10.35569 (258, 8)	4.05774 (56, 7)
170.0 /	13.68789 (32, 1)	10.83311 (32, 1)	8.35715C(214, 2)	6.66725C(214, 2)	2.83472C(25, 8)
160.0 /	13.72109 (264, 4)	11.27324 (202, 7)	10.03807 (202, 7)	8.08406 (202, 7)	2.54744 (240, 7)
150.0 /	20.16585C(265, 7)	16.59238C(265, 7)	12.64031C(265, 7)	10.16181C(224, 8)	3.47635C(174, 8)
140.0 /	19.91859 (60, 1)	16.55764 (183, 3)	12.05487 (183, 3)	10.61547 (118, 1)	3.25643 (161, 8)
130.0 /	19.39524 (66, 7)	15.38210 (66, 7)	12.82692 (153, 8)	12.10156 (215, 1)	4.92827C(51, 2)
120.0 /	21.79261 (234, 7)	20.27784 (234, 7)	16.71234 (234, 7)	12.77250 (234, 7)	3.06136C(112, 1)
110.0 /	18.50495 (36, 6)	13.94195 (36, 6)	10.28309 (184, 7)	8.71223 (16, 6)	2.96898 (118, 1)
100.0 /	17.90803 (185, 3)	16.12823 (185, 3)	12.64033 (60, 1)	9.09274 (60, 1)	1.99177 (185, 3)
90.0 /	14.56996 (14, 4)	11.50260C(187, 4)	9.39884C(213, 1)	9.12618 (184, 8)	3.86941 (50, 7)
80.0 /	18.37656 (150, 3)	12.79229 (1, 3)	10.88343C(235, 3)	8.16643 (150, 3)	2.11482C(7, 7)
70.0 /	16.26670 (270, 6)	11.55553 (265, 1)	9.34185 (265, 1)	6.97136C(235, 1)	2.38706C(19, 7)
60.0 /	16.10255 (307, 4)	12.80507 (151, 6)	9.59595 (185, 3)	8.95513 (165, 1)	3.40624 (233, 8)
50.0 /	16.01410 (41, 4)	15.28368 (176, 7)	12.81774 (176, 7)	11.68678 (175, 7)	3.86679 (175, 7)
40.0 /	17.88800 (93, 7)	14.15079 (93, 7)	11.57721 (151, 7)	10.18186 (151, 7)	2.96898 (288, 7)
30.0 /	18.93571 (364, 7)	16.94509 (364, 7)	14.28667 (47, 8)	11.21306 (47, 8)	2.55382 (18, 6)
20.0 /	21.03309 (63, 4)	16.25287 (63, 4)	12.69688 (3, 6)	9.41906 (3, 6)	3.32432 (63, 7)
10.0 /	16.76595 (4, 3)	13.39188 (350, 3)	10.66996 (59, 2)	8.95515 (59, 1)	2.85650 (4, 3)
360.0 /	20.97054 (110, 3)	15.37210 (110, 3)	10.88223 (110, 3)	8.95516 (265, 2)	3.47636 (265, 2)

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HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 30.42662 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	17.73850 (157, 2)	21.08405 (157, 2)	19.75873 (157, 2)	15.11409 (157, 2)	10.64690 (157, 2)
340.0 /	18.12153 (220, 2)	19.48071 (160, 2)	18.11662 (160, 2)	13.78651 (160, 2)	9.78962C(239, 1)
330.0 /	17.73912 (221, 2)	19.51710 (221, 2)	17.25992 (221, 2)	12.63813 (221, 2)	8.65723 (221, 2)
320.0 /	13.15725 (64, 2)	14.66765 (64, 2)	14.50126 (22, 2)	11.87501 (22, 2)	11.91389 (116, 1)
310.0 /	14.18334 (135, 2)	15.77503 (134, 2)	15.71997 (155, 2)	16.51693 (155, 2)	14.71269 (155, 2)
300.0 /	17.08156 (134, 2)	20.69268 (134, 2)	19.69053 (134, 2)	15.28084 (134, 2)	13.17267 (155, 1)
290.0 /	14.06047 (159, 2)	14.14582 (137, 2)	11.59004 (137, 2)	10.14209C(135, 1)	12.16251C(1, 1)
280.0 /	17.17717 (159, 2)	15.08006 (159, 2)	15.80402 (330, 2)	14.90303C(137, 1)	15.38165C(137, 1)
270.0 /	18.44962 (158, 2)	17.33746 (158, 2)	17.75337 (315, 2)	15.39293 (315, 2)	11.90958 (39, 3)
260.0 /	16.76491 (249, 2)	16.37744 (249, 2)	15.69852C(187, 2)	15.91024C(187, 2)	13.87980C(187, 2)

250.0 /	17.76187 (249, 2)	17.95498 (249, 2)	17.17328 (266, 2)	15.52210 (122, 2)	13.08874 (122, 2)
240.0 /	16.78967 (241, 2)	21.43143 (123, 2)	21.65038 (123, 2)	17.96247 (123, 2)	15.89741 (8, 3)
230.0 /	14.55075 (260, 2)	18.29354 (35, 2)	19.87762 (35, 2)	16.83307 (35, 2)	13.93916 (343, 2)
220.0 /	13.82177 (256, 2)	17.53370 (256, 2)	17.21291 (256, 2)	13.63101 (256, 2)	13.18449C(197, 3)
210.0 /	11.42936 (256, 2)	14.55353 (256, 2)	14.34617 (256, 2)	11.40082 (256, 2)	8.22993 (256, 2)
200.0 /	15.15098 (118, 2)	15.30925 (118, 2)	12.54883 (118, 2)	8.67179 (288, 2)	6.93233 (309, 2)
190.0 /	16.49933 (118, 2)	16.04527 (118, 2)	14.45346 (44, 2)	12.29376 (44, 2)	12.05810C(77, 1)
180.0 /	11.43359 (17, 2)	13.52929 (17, 2)	12.81931 (44, 2)	12.20901 (44, 2)	10.27980 (44, 2)
170.0 /	12.85311 (77, 2)	13.05060 (77, 2)	12.07848 (24, 2)	11.37322 (24, 2)	10.09603C(42, 1)
160.0 /	8.82836 (77, 2)	8.91319 (77, 2)	9.08273 (264, 2)	9.96931 (8, 3)	11.88964 (8, 3)
150.0 /	8.05810 (283, 2)	9.31121 (283, 2)	8.50631 (283, 2)	11.00621 (59, 3)	12.50694 (59, 3)
140.0 /	13.53949 (240, 2)	13.09116 (283, 2)	12.22979 (283, 2)	12.52381C(183, 1)	12.50716C(183, 1)
130.0 /	16.79893 (240, 2)	15.00531 (240, 2)	11.22749 (240, 2)	10.67314 (66, 3)	12.09523 (66, 3)
120.0 /	12.40243 (240, 2)	11.95529C(234, 2)	11.37495C(234, 2)	10.47453C(234, 3)	11.98998C(234, 3)
110.0 /	14.26362C(234, 2)	16.45602C(234, 2)	16.02693 (181, 2)	14.56365 (181, 2)	11.61938 (181, 2)
100.0 /	15.33257 (236, 2)	16.08654 (236, 2)	14.97466 (185, 2)	13.40582 (215, 2)	11.06972 (215, 2)
90.0 /	16.22643C(225, 2)	17.50180 (236, 2)	16.95895 (236, 2)	13.33302 (236, 2)	9.58183 (236, 2)
80.0 /	19.50230 (206, 2)	18.95529 (206, 2)	16.78995 (117, 2)	13.13386 (117, 2)	10.14762C(229, 3)
70.0 /	18.44408 (112, 2)	19.52964C(20, 2)	18.73546C(20, 2)	14.75780C(8, 2)	13.52052C(8, 2)
60.0 /	21.15809 (112, 2)	21.29166 (227, 2)	20.28752 (227, 2)	15.75506 (227, 2)	11.22645 (227, 2)
50.0 /	19.03399C(186, 2)	20.98576C(186, 2)	20.03650 (56, 2)	16.35841 (56, 2)	12.00987 (56, 2)
40.0 /	13.07310 (208, 2)	16.20893 (18, 2)	16.02744 (18, 2)	12.78868 (18, 2)	11.54076 (98, 3)
30.0 /	17.06953 (149, 2)	17.17256 (149, 2)	14.02718 (149, 2)	10.40007 (226, 2)	10.16100 (47, 3)
20.0 /	17.14261 (194, 2)	17.27065 (194, 2)	14.46849 (194, 2)	13.35644 (63, 2)	12.28686 (63, 2)
10.0 /	17.29489 (110, 2)	20.33106 (239, 2)	18.89588 (239, 2)	14.25918 (239, 2)	9.90580 (239, 2)
360.0 /	24.73795 (239, 2)	30.42662 (239, 2)	29.18803 (239, 2)	22.75780 (239, 2)	16.25527 (239, 2)

1

HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 30.42662 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	10.74102 (264, 3)	9.38553 (264, 3)	8.16247C(117, 1)	7.53196C(117, 1)	2.44883C(117, 1)
340.0 /	9.91553C(239, 1)	8.47072C(239, 1)	6.59523C(239, 1)	4.80789C(239, 1)	2.02887C(73, 3)
330.0 /	7.78879 (231, 1)	6.25103 (231, 1)	7.54068C(161, 1)	8.21045C(161, 1)	3.21758C(161, 1)
320.0 /	11.35974 (340, 1)	10.75819 (155, 3)	9.60118C(210, 1)	9.09408C(210, 1)	2.79992C(210, 1)
310.0 /	11.75241 (155, 2)	9.60935 (146, 3)	8.85921 (156, 1)	8.08075 (156, 1)	3.49495C(21, 1)
300.0 /	12.25966 (155, 1)	10.19792 (155, 1)	7.97005 (155, 1)	7.85462C(334, 1)	2.87649C(354, 3)
290.0 /	13.39186C(1, 1)	12.33424C(1, 1)	11.00827C(161, 1)	9.59833C(224, 1)	2.58637C(224, 1)
280.0 /	15.01473C(137, 1)	13.96605C(137, 1)	12.40839C(137, 1)	10.44365C(137, 1)	2.68057C(137, 1)
270.0 /	11.56853 (39, 3)	9.56831 (39, 3)	7.85015 (348, 3)	6.36014 (348, 3)	2.74049C(327, 1)
260.0 /	10.92662C(187, 2)	7.71318C(187, 2)	6.15347 (124, 3)	6.26772 (15, 1)	2.99568 (15, 1)
250.0 /	11.30008 (113, 3)	9.93585 (252, 1)	8.80539 (251, 1)	7.60202 (251, 1)	2.16912 (164, 1)
240.0 /	14.79679 (8, 3)	11.72652 (8, 3)	8.90802C(216, 1)	7.89296C(216, 1)	2.44483C(270, 1)
230.0 /	13.97502 (267, 1)	13.65752 (267, 1)	11.53260 (267, 1)	8.94845 (267, 1)	2.68741 (139, 1)
220.0 /	12.73145C(197, 3)	11.27447C(197, 3)	9.12087C(197, 3)	6.90051C(197, 3)	1.71347 (300, 1)
210.0 /	6.77173 (38, 2)	7.25948C(247, 1)	6.53633C(247, 1)	5.30605C(247, 1)	2.20718C(73, 1)
200.0 /	6.33984C(225, 3)	5.11991C(225, 3)	4.00124 (111, 1)	3.41824C(62, 1)	1.80301C(10, 1)
190.0 /	11.52284C(77, 1)	9.29352C(77, 1)	7.69810 (288, 1)	6.03490 (288, 1)	1.49788 (352, 1)
180.0 /	9.28754C(42, 1)	7.31747C(42, 1)	6.17119C(238, 3)	4.90234C(238, 3)	1.57498 (258, 3)

170.0 /	9.65010C(42, 1)	7.74927C(42, 1)	5.75913C(42, 1)	4.03007C(42, 1)	1.41736C(25, 3)
160.0 /	11.37358 (8, 3)	9.22524 (8, 3)	6.97212 (8, 3)	4.98446 (8, 3)	.99410C(269, 3)
150.0 /	11.53425 (59, 3)	9.06344 (59, 3)	6.68998 (59, 3)	4.69791C(269, 3)	1.62064C(269, 3)
140.0 /	10.89394C(183, 1)	8.36217C(183, 1)	6.12209C(183, 1)	4.61499C(76, 3)	1.62317 (118, 1)
130.0 /	11.18783 (66, 3)	8.85852 (66, 3)	8.02684 (156, 3)	7.87628 (156, 3)	2.61047 (156, 3)
120.0 /	11.97705C(234, 3)	10.45626C(234, 3)	8.32071C(234, 3)	6.19878C(234, 3)	1.80646C(112, 1)
110.0 /	10.31412C(37, 1)	9.07172C(37, 1)	7.53566C(37, 1)	6.03101C(37, 1)	1.91087C(37, 1)
100.0 /	10.46868C(239, 3)	9.60817C(239, 3)	7.86859C(239, 3)	5.98252C(239, 3)	1.15580C(239, 3)
90.0 /	7.11351C(187, 2)	5.75130C(187, 2)	4.69942C(213, 1)	5.17784C(213, 1)	2.09376C(213, 1)
80.0 /	8.33121C(73, 3)	7.62965C(73, 3)	6.23410C(73, 3)	4.73725C(73, 3)	1.35951C(214, 1)
70.0 /	10.98216C(8, 2)	7.91665C(8, 2)	5.57258C(19, 3)	5.28249C(19, 3)	1.75961C(19, 3)
60.0 /	8.94962C(74, 3)	8.43159C(74, 3)	7.26587C(74, 3)	5.85312C(74, 3)	1.31576C(73, 3)
50.0 /	10.08259C(176, 3)	9.27204 (174, 1)	8.04773 (175, 3)	6.86587 (175, 3)	1.85930 (175, 3)
40.0 /	10.58601 (98, 3)	8.84029 (58, 3)	7.06525 (58, 3)	5.27197 (58, 3)	1.31189C(235, 1)
30.0 /	10.57139 (47, 3)	9.51404 (47, 3)	7.81065C(18, 3)	6.09466C(18, 3)	1.35451C(316, 3)
20.0 /	10.15507 (63, 2)	7.50550 (63, 2)	5.35714 (63, 2)	4.47758C(333, 3)	1.73818C(333, 3)
10.0 /	7.61108 (350, 1)	6.93375 (363, 3)	7.07070 (59, 1)	6.59067 (59, 1)	2.03813 (59, 1)
360.0 /	10.90107 (239, 2)	8.18060C(364, 3)	7.20625C(364, 3)	5.73946C(364, 3)	1.38312 (59, 1)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 22.63671 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	14.02761 (160, 2)	16.01870 (160, 2)	14.52154 (153, 2)	12.11069 (153, 2)	10.40235 (264, 3)
340.0 /	16.53163 (160, 2)	19.08475 (220, 2)	17.04526 (153, 2)	13.36197 (153, 2)	9.69262 (160, 2)
330.0 /	16.87757 (220, 2)	18.04702 (220, 2)	15.57907 (220, 2)	11.17233 (220, 2)	8.37433 (350, 1)
320.0 /	12.43402 (221, 2)	14.18088 (221, 2)	13.25821 (218, 2)	11.76430C(175, 1)	11.88537 (156, 1)
310.0 /	13.57324 (134, 2)	15.40531C(20, 2)	15.44251C(20, 2)	12.47666C(20, 2)	11.30061C(210, 3)
300.0 /	12.32155 (135, 2)	14.63587 (92, 2)	16.44316 (92, 2)	14.19813 (92, 2)	10.89616 (134, 2)
290.0 /	13.99113 (137, 2)	12.56900 (159, 2)	11.03401 (356, 2)	9.89625 (356, 2)	10.87084C(161, 1)
280.0 /	14.11520 (137, 2)	14.96751 (330, 2)	13.41594 (39, 2)	13.09002 (330, 2)	11.73778 (194, 3)
270.0 /	18.04750 (159, 2)	16.24796 (244, 2)	17.63979 (250, 2)	15.08580 (250, 2)	11.71250 (315, 2)
260.0 /	14.54442 (159, 2)	14.43403 (267, 2)	13.23261 (249, 2)	10.76811 (303, 2)	10.67665 (89, 3)
250.0 /	17.29882 (267, 2)	17.51523 (266, 2)	15.81161 (122, 2)	13.56125 (266, 2)	12.23147 (113, 3)
240.0 /	16.65336 (123, 2)	18.47227 (266, 2)	18.20895 (266, 2)	14.42677 (266, 2)	13.57020 (123, 2)
230.0 /	14.02997 (72, 2)	15.61486 (260, 2)	17.60649 (299, 2)	16.56658 (299, 2)	13.75609 (342, 1)
220.0 /	13.02463 (216, 2)	16.50644 (216, 2)	16.22609 (216, 2)	13.16260C(197, 3)	11.31584 (38, 2)
210.0 /	9.76911 (141, 2)	10.41740 (141, 2)	9.19037 (15, 2)	7.95052 (15, 2)	7.30012 (296, 2)
200.0 /	9.58081 (203, 2)	10.87263 (288, 2)	10.82481 (288, 2)	8.56669 (118, 2)	6.62728C(225, 3)
190.0 /	11.38583 (203, 2)	13.66452 (44, 2)	12.81082 (118, 2)	10.06374C(77, 1)	9.36580 (44, 2)
180.0 /	10.68698 (77, 2)	12.63042C(355, 2)	12.64742 (17, 2)	9.96924C(355, 2)	9.87278C(42, 1)
170.0 /	11.68833 (17, 2)	12.34094 (17, 2)	10.71664 (77, 2)	8.37312C(42, 1)	9.34096 (24, 2)
160.0 /	7.49607 (208, 2)	7.81109 (208, 2)	7.81610 (24, 2)	8.31817 (264, 2)	9.20692 (59, 3)
150.0 /	8.03798C(365, 2)	8.38845C(365, 2)	7.02956C(365, 2)	8.41575C(265, 3)	10.33591C(265, 3)
140.0 /	11.11178 (283, 2)	11.77967 (240, 2)	10.14747C(183, 1)	9.36566 (283, 2)	8.83385 (350, 3)
130.0 /	9.20472 (137, 2)	9.37110 (223, 2)	9.63449 (187, 1)	9.39576 (346, 2)	10.55287 (346, 2)
120.0 /	11.47496 (233, 2)	11.44796 (233, 2)	10.12471 (171, 2)	8.78576C(234, 2)	7.56253 (52, 2)
110.0 /	12.25506 (135, 2)	13.79322 (181, 2)	15.07128C(234, 2)	12.06931C(355, 2)	10.36777C(37, 1)
100.0 /	13.58625 (55, 2)	15.98004 (55, 2)	14.94233 (215, 2)	13.22795 (185, 2)	10.29233 (185, 2)

90.0 /	14.10951 (236, 2)	16.45694C(225, 2)	15.30502 (185, 2)	12.29257 (185, 2)	9.38357 (147, 2)
80.0 /	16.32196C(225, 2)	17.32797 (117, 2)	15.17449 (206, 2)	13.08315C(229, 3)	9.38399 (117, 2)
70.0 /	17.30751 (206, 2)	18.19825 (117, 2)	16.57542 (117, 2)	14.65300C(20, 2)	10.50920C(20, 2)
60.0 /	17.99240C(186, 2)	20.75968 (112, 2)	17.07339 (56, 2)	13.68373 (56, 2)	10.09470C(176, 3)
50.0 /	14.90513 (179, 2)	19.46770 (56, 2)	18.57008C(186, 2)	13.61206C(186, 2)	10.80333C(41, 2)
40.0 /	12.68439 (18, 2)	14.97091 (65, 2)	14.72845 (65, 2)	11.70923 (65, 2)	9.54597 (58, 3)
30.0 /	12.31595 (76, 2)	14.34454 (76, 2)	13.31337 (76, 2)	10.14522 (76, 2)	9.79418 (95, 3)
20.0 /	15.04878 (149, 2)	15.14061 (149, 2)	13.30833C(8, 2)	12.19857C(8, 2)	9.57903C(8, 2)
10.0 /	17.06686 (239, 2)	17.21336 (110, 2)	14.75671 (195, 2)	10.47158 (195, 2)	8.20763 (350, 1)
360.0 /	20.19612 (157, 2)	22.63671 (157, 2)	20.31605 (157, 2)	15.04320 (157, 2)	11.54020 (64, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 22.63671 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	7.98194C(117, 1)	8.29866C(117, 1)	7.42249 (264, 3)	6.04678C(316, 3)	1.65804C(316, 3)
340.0 /	8.09440C(228, 3)	7.52405 (333, 1)	6.18976 (333, 1)	4.69441 (333, 1)	1.14318 (231, 3)
330.0 /	7.74244 (350, 1)	6.24200C(345, 1)	5.57524 (363, 1)	5.02250 (363, 1)	1.69099 (363, 1)
320.0 /	11.10463 (155, 3)	9.89089 (340, 1)	9.01156 (155, 3)	6.93387 (155, 3)	2.34195C(176, 3)
310.0 /	11.12396 (146, 3)	8.93685 (156, 1)	7.55237 (146, 3)	6.88663C(21, 1)	2.41437 (156, 1)
300.0 /	10.27486 (205, 1)	8.99751 (205, 1)	7.70443C(212, 1)	7.23111 (195, 1)	2.72339C(208, 1)
290.0 /	12.01358C(161, 1)	12.06832C(161, 1)	10.59047C(224, 1)	9.35870C(161, 1)	2.51801C(161, 1)
280.0 /	12.55435 (194, 3)	11.98954 (194, 3)	10.57650 (194, 3)	8.75062 (194, 3)	2.12422 (194, 3)
270.0 /	10.41287 (277, 1)	8.79708 (348, 3)	7.30965 (39, 3)	6.23437C(327, 1)	1.98453 (7, 1)
260.0 /	9.78063 (89, 3)	7.64614 (89, 3)	6.13478 (252, 3)	6.25703C(190, 1)	2.62779 (353, 1)
250.0 /	10.57872 (2, 1)	9.53682 (251, 1)	8.60120 (252, 1)	7.35150C(261, 1)	2.14335 (295, 1)
240.0 /	12.40547 (324, 1)	11.08703 (324, 1)	8.87208 (324, 1)	6.81001C(245, 1)	2.27515C(216, 1)
230.0 /	13.28314 (342, 1)	10.91139 (342, 1)	8.31681 (305, 1)	7.38355 (305, 1)	2.39646 (305, 1)
220.0 /	10.42979 (38, 2)	8.74153 (312, 1)	7.05058 (312, 1)	5.37564 (312, 1)	1.35748C(197, 3)
210.0 /	6.62550 (296, 2)	5.77148 (182, 1)	5.21085 (182, 1)	5.11404C(73, 1)	1.35451C(256, 1)
200.0 /	6.26838 (309, 2)	4.84630 (309, 2)	3.83732C(62, 1)	3.28021C(71, 3)	1.49660C(71, 3)
190.0 /	8.97765 (288, 1)	8.99697 (288, 1)	6.96056C(77, 1)	5.13140 (309, 3)	1.48987C(222, 3)
180.0 /	8.77622 (38, 1)	7.03702 (67, 1)	5.88561 (67, 1)	4.55629 (67, 1)	1.52217C(62, 1)
170.0 /	7.01586 (24, 2)	4.78232 (24, 2)	4.22404 (111, 3)	3.90712 (111, 3)	1.34043 (353, 1)
160.0 /	8.43944 (59, 3)	6.58914 (59, 3)	4.83571 (59, 3)	3.36058 (59, 3)	.98392 (92, 3)
150.0 /	10.08292C(265, 3)	8.29619C(265, 3)	6.32016C(265, 3)	4.67623 (59, 3)	1.55027C(224, 3)
140.0 /	8.14621 (350, 3)	6.81560 (60, 1)	5.59624 (60, 1)	4.28155 (60, 1)	1.52218C(76, 3)
130.0 /	9.68934 (346, 2)	7.61887 (346, 2)	6.60853 (66, 3)	6.46479C(183, 1)	2.46414C(51, 1)
120.0 /	8.08821 (181, 3)	7.87429 (181, 3)	6.62978 (181, 3)	5.30605C(318, 3)	1.58027C(183, 1)
110.0 /	8.52383 (181, 2)	6.83584 (36, 3)	5.55983 (237, 3)	4.63808 (237, 3)	1.14530C(16, 3)
100.0 /	8.49502 (215, 2)	6.33990C(8, 2)	5.01904C(185, 1)	4.04204C(185, 1)	.98392 (165, 1)
90.0 /	7.03752 (147, 2)	5.09332C(169, 3)	4.40988 (184, 3)	4.30176 (184, 3)	1.93471C(50, 3)
80.0 /	7.19478C(229, 3)	6.36184 (235, 3)	5.44172C(235, 1)	4.53088C(214, 1)	1.05741C(7, 3)
70.0 /	7.08103C(20, 2)	5.45810 (1, 2)	5.50265C(8, 2)	3.66808C(8, 2)	1.31341C(235, 1)
60.0 /	8.47877C(176, 3)	6.37662C(176, 3)	4.79798C(185, 1)	3.70012 (172, 3)	1.30363 (165, 1)
50.0 /	9.77287 (174, 1)	8.95895 (175, 3)	7.85525 (174, 1)	6.21437 (174, 1)	1.75210C(185, 1)
40.0 /	9.98454 (58, 3)	8.31752 (98, 3)	6.16699 (98, 3)	4.33998 (98, 3)	1.27242C(288, 3)
30.0 /	9.60723C(18, 3)	9.24646C(18, 3)	7.67703 (47, 3)	5.76150 (47, 3)	1.27605C(18, 3)
20.0 /	8.59197C(1, 1)	6.85744C(1, 1)	5.33175 (47, 3)	4.00712C(63, 3)	1.42474C(63, 3)

10.0 /	7.49319 (363, 3)	6.74695 (59, 1)	5.64378 (363, 3)	4.24124 (363, 3)	1.08992 (4, 1)
360.0 /	9.41932 (64, 3)	7.11034 (231, 1)	5.26954 (231, 1)	3.74037 (59, 1)	1.36278C(63, 3)

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*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 13.52593 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	7.09540C(157, 1)	8.43362C(157, 1)	7.90350C(157, 1)	6.04564C(157, 1)	6.02504 (231, 1)
340.0 /	6.04482 (220, 1)	7.28053 (153, 1)	7.78987 (153, 1)	6.99204 (153, 1)	5.65613 (153, 1)
330.0 /	6.17015C(221, 1)	6.78992C(221, 1)	6.02067C(221, 1)	5.47381 (218, 1)	5.18491 (231, 1)
320.0 /	5.37921C(204, 1)	6.56044C(204, 1)	6.90344C(204, 1)	6.53946C(204, 1)	5.76339C(204, 1)
310.0 /	5.76425C(19, 1)	5.97659C(19, 1)	7.12171 (154, 1)	7.70594 (155, 1)	7.30444 (155, 1)
300.0 /	6.41706C(134, 1)	7.97681C(134, 1)	7.72849C(134, 1)	6.09787C(134, 1)	6.18553 (337, 1)
290.0 /	5.63977C(137, 1)	5.94307C(137, 1)	5.12917C(137, 1)	5.20719 (336, 1)	6.26412 (336, 1)
280.0 /	6.62726C(137, 1)	7.62182C(137, 1)	7.76190C(137, 1)	7.48193C(137, 1)	7.09215C(137, 1)
270.0 /	6.51685 (158, 1)	6.40533 (158, 1)	6.62649 (315, 1)	6.59230 (315, 1)	6.37368 (39, 1)
260.0 /	5.98353 (249, 1)	6.30545 (249, 1)	5.84491 (249, 1)	7.16386 (304, 1)	7.22688 (304, 1)
250.0 /	6.69154 (249, 1)	7.59811 (249, 1)	7.71002 (249, 1)	7.03607 (249, 1)	6.78866 (304, 1)
240.0 /	7.46330 (123, 1)	10.60015 (123, 1)	11.67418 (123, 1)	10.54532 (123, 1)	9.25521 (342, 1)
230.0 /	8.28980C(259, 1)	8.58061C(259, 1)	8.37317C(35, 1)	8.05146 (343, 1)	9.37773 (343, 1)
220.0 /	8.73362C(259, 1)	9.08795C(259, 1)	7.57105C(259, 1)	7.25796 (311, 1)	8.13992 (311, 1)
210.0 /	6.12055C(259, 1)	6.31962C(259, 1)	5.21657C(259, 1)	3.97445C(256, 1)	4.24545 (296, 1)
200.0 /	5.05451 (118, 1)	5.11819 (118, 1)	5.45624C(288, 1)	4.81970C(288, 1)	4.69049 (309, 1)
190.0 /	5.51969 (118, 1)	5.51947 (118, 1)	5.27793C(77, 1)	6.10572C(77, 1)	5.95996C(77, 1)
180.0 /	3.97746C(17, 1)	4.71061C(17, 1)	4.86377 (67, 1)	5.17635C(42, 1)	6.09210C(42, 1)
170.0 /	4.47065C(77, 1)	4.53938C(77, 1)	4.40045C(17, 1)	3.93295C(17, 1)	3.63338C(42, 1)
160.0 /	3.07492C(77, 1)	3.13349C(77, 1)	3.02758 (264, 1)	4.19761C(8, 1)	5.00617C(8, 1)
150.0 /	3.62179C(283, 1)	4.44705C(283, 1)	4.71257C(283, 1)	6.35010 (59, 1)	7.18163 (59, 1)
140.0 /	4.94299C(283, 1)	5.85108C(283, 1)	5.52975C(283, 1)	5.88197 (60, 1)	6.94381 (60, 1)
130.0 /	6.08822C(240, 1)	5.62688C(240, 1)	4.64377C(233, 1)	5.20374C(233, 1)	5.81865 (66, 1)
120.0 /	5.28807C(240, 1)	6.43938C(234, 1)	7.35148C(234, 1)	7.49011C(234, 1)	7.08366C(234, 1)
110.0 /	5.67569C(234, 1)	6.78048C(234, 1)	6.72276C(234, 1)	6.06348 (181, 1)	5.64748 (181, 1)
100.0 /	6.84057C(236, 1)	7.59231C(180, 1)	8.21343C(180, 1)	7.31474C(180, 1)	6.05149C(180, 1)
90.0 /	8.58391C(225, 1)	8.71415C(225, 1)	7.57590C(236, 1)	5.98513C(236, 1)	4.55657C(185, 1)
80.0 /	8.05898C(225, 1)	8.17466C(225, 1)	6.70074C(225, 1)	5.51144 (84, 1)	5.00904C(235, 1)
70.0 /	7.02632C(112, 1)	6.83537C(20, 1)	6.55741C(20, 1)	5.31845C(229, 1)	4.26964C(8, 1)
60.0 /	8.06022C(112, 1)	7.90845C(112, 1)	7.58817C(56, 1)	6.08166C(56, 1)	4.40114C(56, 1)
50.0 /	6.26374C(56, 1)	8.65231C(56, 1)	8.90511C(56, 1)	7.27040C(56, 1)	6.81718C(175, 1)
40.0 /	5.07490C(18, 1)	6.49306C(18, 1)	6.43969C(18, 1)	5.30955C(74, 1)	4.33996 (99, 1)
30.0 /	5.90808 (149, 1)	6.14212 (149, 1)	5.40820C(74, 1)	5.28374 (47, 1)	5.25062 (47, 1)
20.0 /	5.71420 (194, 1)	5.93509C(213, 1)	5.32037C(213, 1)	4.87362C(63, 1)	4.59728C(63, 1)
10.0 /	7.58527C(239, 1)	9.03603C(239, 1)	8.39817C(239, 1)	6.33742C(239, 1)	4.40258C(239, 1)
360.0 /	10.99469C(239, 1)	13.52593C(239, 1)	13.01058C(239, 1)	10.28633C(239, 1)	7.56402C(239, 1)

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*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 13.52593 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	5.22966 (231, 1)	4.16079 (264, 1)	3.28066 (264, 1)	2.45054 (264, 1)	.74530C(117, 1)
340.0 /	4.46118 (231, 1)	3.73672 (231, 1)	3.02133 (231, 1)	2.34650 (231, 1)	.65039C(73, 1)
330.0 /	4.63918 (231, 1)	3.83936C(345, 1)	3.15431C(345, 1)	2.49887C(161, 1)	.97926C(161, 1)
320.0 /	4.73871C(204, 1)	4.25342 (155, 1)	3.43813 (155, 1)	2.83773C(210, 1)	.83224C(210, 1)
310.0 /	6.12441 (155, 1)	5.19202 (146, 1)	4.12451 (146, 1)	3.34588 (147, 1)	1.10367C(21, 1)
300.0 /	6.03043 (337, 1)	5.08108 (337, 1)	3.93195 (337, 1)	3.21828C(334, 1)	.88536C(334, 1)
290.0 /	6.36338 (336, 1)	5.55875 (336, 1)	4.40518 (336, 1)	3.26238 (336, 1)	.95893C(263, 1)
280.0 /	6.64321C(137, 1)	5.95246C(137, 1)	5.08224 (194, 1)	4.59807 (194, 1)	1.33023 (194, 1)
270.0 /	5.71274 (39, 1)	4.86159 (39, 1)	4.11100 (39, 1)	3.51392 (217, 1)	.92751C(327, 1)
260.0 /	6.27136 (304, 1)	4.76274 (304, 1)	3.69608C(198, 1)	2.97787C(198, 1)	1.02467 (15, 1)
250.0 /	6.15520 (291, 1)	5.24252 (291, 1)	4.09140 (291, 1)	3.18603 (141, 1)	.78020 (141, 1)
240.0 /	8.56901 (342, 1)	6.77061 (342, 1)	5.02384 (342, 1)	3.76640 (280, 1)	1.16847C(270, 1)
230.0 /	8.89310 (343, 1)	7.20003 (343, 1)	5.43302 (343, 1)	3.87240 (343, 1)	.90584 (139, 1)
220.0 /	7.46525 (311, 1)	5.86428 (311, 1)	4.59603 (312, 1)	3.40636 (312, 1)	.78669 (300, 1)
210.0 /	4.33004C(247, 1)	4.16891C(247, 1)	3.51046C(247, 1)	2.72709C(247, 1)	.69700C(73, 1)
200.0 /	4.37465 (309, 1)	3.51121 (309, 1)	2.63873 (309, 1)	1.99867C(71, 1)	.93588C(71, 1)
190.0 /	5.12194C(77, 1)	3.99295 (309, 1)	3.40079 (309, 1)	2.69284 (309, 1)	.56900 (309, 1)
180.0 /	5.72873C(42, 1)	4.54440C(42, 1)	3.35316C(42, 1)	2.33338C(42, 1)	.68949C(62, 1)
170.0 /	3.43798C(42, 1)	2.73834C(42, 1)	2.02365C(42, 1)	1.40896C(42, 1)	.44681 (353, 1)
160.0 /	4.78888C(8, 1)	3.88431C(8, 1)	2.93563C(8, 1)	2.24559 (26, 1)	.46822 (26, 1)
150.0 /	6.60159 (59, 1)	5.17508 (59, 1)	3.81492 (59, 1)	2.66424 (59, 1)	.57116C(224, 1)
140.0 /	6.71675 (60, 1)	5.58462 (60, 1)	4.30677 (60, 1)	3.13148 (60, 1)	.56019 (118, 1)
130.0 /	5.36452 (66, 1)	4.23531 (66, 1)	3.15268 (66, 1)	2.62543 (156, 1)	.87016 (156, 1)
120.0 /	6.26804C(234, 1)	5.49300 (181, 1)	4.50660 (181, 1)	3.45837 (181, 1)	.69261 (181, 1)
110.0 /	4.92448 (181, 1)	3.94523 (181, 1)	3.00966 (181, 1)	2.27737C(237, 1)	.62420C(37, 1)
100.0 /	4.78206C(180, 1)	3.94741C(239, 1)	3.18137C(239, 1)	2.39385C(239, 1)	.45370C(239, 1)
90.0 /	3.70655C(169, 1)	3.20024C(213, 1)	3.06396C(213, 1)	2.75496C(213, 1)	.82922C(213, 1)
80.0 /	5.28063C(235, 1)	4.88540C(235, 1)	4.03321C(235, 1)	3.08986C(235, 1)	.60252C(235, 1)
70.0 /	3.46805C(8, 1)	2.49999C(8, 1)	2.64660C(235, 1)	2.62744C(235, 1)	.85721C(235, 1)
60.0 /	3.31279C(176, 1)	2.85305C(233, 1)	2.72019C(233, 1)	2.42030C(233, 1)	.66993C(233, 1)
50.0 /	6.04109C(175, 1)	5.10836C(175, 1)	4.28249C(175, 1)	3.47734C(175, 1)	.86884C(175, 1)
40.0 /	3.97921 (99, 1)	3.28169 (58, 1)	2.59642 (58, 1)	1.99263 (81, 1)	.61005 (81, 1)
30.0 /	4.82987 (47, 1)	4.00685 (47, 1)	3.09089 (47, 1)	2.24535 (47, 1)	.41225C(316, 1)
20.0 /	4.16516C(63, 1)	3.65511C(63, 1)	3.15199C(63, 1)	2.60602C(63, 1)	.65269C(63, 1)
10.0 /	3.28475 (363, 1)	2.84700 (363, 1)	2.35690 (59, 1)	2.19689 (59, 1)	.67938 (59, 1)
360.0 /	5.74689 (231, 1)	4.35788 (231, 1)	3.14593 (231, 1)	2.22919C(265, 1)	.64466C(265, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.05468 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0

350.0 /	5.34874C(239, 1)	6.10893C(239, 1)	5.74367 (153, 1)	5.92232 (231, 1)	5.14669 (264, 1)
340.0 /	5.88522 (160, 1)	7.12173 (160, 1)	6.74454 (160, 1)	5.19286 (160, 1)	4.83427 (231, 1)
330.0 /	5.86076 (220, 1)	6.40633 (220, 1)	5.80958 (218, 1)	5.25125 (231, 1)	5.01995 (115, 1)
320.0 /	4.42462 (64, 1)	5.31778 (218, 1)	5.84223 (154, 1)	5.86527 (154, 1)	5.15848 (154, 1)
310.0 /	5.01360C(135, 1)	5.80968 (154, 1)	6.75174 (155, 1)	7.40634 (154, 1)	6.65171 (154, 1)
300.0 /	5.13746C(135, 1)	5.37683C(135, 1)	6.06616 (92, 1)	5.81138 (92, 1)	5.63221 (155, 1)
290.0 /	4.68703 (159, 1)	4.20064 (159, 1)	4.41506C(356, 1)	4.47160 (139, 1)	5.02322 (360, 1)
280.0 /	5.72574 (159, 1)	5.64779 (196, 1)	5.94133 (196, 1)	5.72678 (244, 1)	5.88939 (244, 1)
270.0 /	6.01583 (159, 1)	5.54980 (250, 1)	6.51317 (250, 1)	6.57717 (39, 1)	5.89448 (315, 1)
260.0 /	5.21684C(267, 1)	5.26145C(267, 1)	5.55935 (304, 1)	6.24359 (303, 1)	6.30655 (303, 1)
250.0 /	6.62149C(267, 1)	7.07964C(241, 1)	6.60962 (122, 1)	6.91183 (122, 1)	6.59863 (114, 1)
240.0 /	7.39085C(241, 1)	8.57285C(241, 1)	8.38537C(241, 1)	8.86236 (266, 1)	8.73973 (266, 1)
230.0 /	6.46700C(260, 1)	7.22681C(35, 1)	7.10207C(259, 1)	7.77896C(35, 1)	7.71206 (342, 1)
220.0 /	4.98675C(216, 1)	6.46451C(216, 1)	6.71593C(216, 1)	6.49050 (38, 1)	7.42915 (38, 1)
210.0 /	3.97544C(256, 1)	5.06212C(256, 1)	4.99009C(256, 1)	3.82869 (296, 1)	4.04784 (38, 1)
200.0 /	3.63321C(288, 1)	5.06173C(288, 1)	4.21791 (118, 1)	4.13991 (309, 1)	3.82385C(288, 1)
190.0 /	4.14030C(203, 1)	4.94629 (44, 1)	5.25019 (44, 1)	4.48177 (297, 1)	5.01421 (297, 1)
180.0 /	3.72255C(77, 1)	4.32437 (67, 1)	4.41371C(17, 1)	4.83893 (67, 1)	5.09481 (297, 1)
170.0 /	4.09060C(17, 1)	4.51871C(17, 1)	4.03558 (24, 1)	3.85882 (24, 1)	3.30196C(17, 1)
160.0 /	2.60733C(208, 1)	2.71690C(208, 1)	2.64919C(283, 1)	4.11036 (59, 1)	4.62227 (59, 1)
150.0 /	2.68342C(209, 1)	3.01419C(207, 1)	3.70226 (59, 1)	4.38875C(283, 1)	4.38100 (60, 1)
140.0 /	4.71676C(240, 1)	4.13016C(240, 1)	3.45382C(207, 1)	4.31043C(283, 1)	4.80452 (59, 1)
130.0 /	3.90451C(283, 1)	4.10185C(283, 1)	4.35656C(240, 1)	5.15587 (66, 1)	5.06108C(233, 1)
120.0 /	4.83831C(233, 1)	5.55118C(240, 1)	4.83525C(240, 1)	5.34366 (52, 1)	6.00089 (181, 1)
110.0 /	5.43676C(236, 1)	5.76829C(135, 1)	5.88147 (181, 1)	5.87192C(180, 1)	5.50198C(180, 1)
100.0 /	6.04107C(55, 1)	7.35474C(236, 1)	6.78593C(161, 1)	5.99218C(161, 1)	5.23961C(185, 1)
90.0 /	6.27266C(236, 1)	7.79198C(236, 1)	7.16309C(225, 1)	5.79045C(185, 1)	4.32026C(236, 1)
80.0 /	6.50080 (206, 1)	6.31847 (206, 1)	5.94507C(229, 1)	5.10490C(229, 1)	4.94252 (84, 1)
70.0 /	5.78673 (206, 1)	6.65979C(112, 1)	6.38920C(229, 1)	5.30688C(328, 1)	3.95175C(328, 1)
60.0 /	5.84687 (227, 1)	7.54563C(56, 1)	6.81962 (227, 1)	5.50612 (227, 1)	4.24889 (227, 1)
50.0 /	6.05627C(186, 1)	6.67729C(186, 1)	6.55973C(175, 1)	7.19335C(175, 1)	6.33755C(176, 1)
40.0 /	4.55302C(208, 1)	5.68992C(74, 1)	6.25566C(74, 1)	5.16064C(18, 1)	3.98334C(74, 1)
30.0 /	4.69179C(76, 1)	5.46459C(76, 1)	5.28622 (149, 1)	5.11639C(65, 1)	4.84588C(65, 1)
20.0 /	5.30677C(213, 1)	5.75688 (194, 1)	4.89740C(224, 1)	4.04676 (43, 1)	3.79719 (43, 1)
10.0 /	5.76549 (110, 1)	5.74236 (110, 1)	4.91894 (195, 1)	3.58913 (230, 1)	3.26893 (363, 1)
360.0 /	8.07845C(157, 1)	9.05468C(157, 1)	8.12642C(157, 1)	6.46207 (231, 1)	6.59711 (231, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1982 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.05468 AND OCCURRED AT (241.0, 360.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	4.92319 (264, 1)	3.94941 (231, 1)	2.83994 (231, 1)	2.29233C(117, 1)	.54959 (264, 1)
340.0 /	4.22822 (153, 1)	3.42187C(76, 1)	2.80487C(76, 1)	2.13640C(76, 1)	.51676 (231, 1)
330.0 /	4.50964 (115, 1)	3.74475 (231, 1)	2.87549 (231, 1)	2.40365C(345, 1)	.60039 (363, 1)
320.0 /	4.70516 (155, 1)	3.76915C(364, 1)	3.11054C(210, 1)	2.58092 (155, 1)	.71340C(176, 1)
310.0 /	5.90205 (146, 1)	4.63895 (361, 1)	3.90148 (147, 1)	3.05827 (146, 1)	.94887C(263, 1)
300.0 /	5.11152 (154, 1)	4.46981 (359, 1)	3.79714 (361, 1)	3.18943 (361, 1)	.87545C(354, 1)

290.0 /	4.74823 (154, 1)	4.32915 (154, 1)	3.52787 (154, 1)	3.03668C(263, 1)	.82286 (335, 1)
280.0 /	5.52684C(356, 1)	5.34292C(356, 1)	5.08099C(137, 1)	4.11874C(137, 1)	.98156C(137, 1)
270.0 /	5.24957 (276, 1)	4.58561C(259, 1)	4.09585 (217, 1)	3.40045 (39, 1)	.92018 (39, 1)
260.0 /	5.48179 (89, 1)	4.36993 (89, 1)	3.45455 (304, 1)	2.38795 (304, 1)	.87593 (353, 1)
250.0 /	6.04941 (114, 1)	4.73571 (114, 1)	3.90946 (141, 1)	2.99498 (291, 1)	.74787 (295, 1)
240.0 /	7.84579 (266, 1)	6.27454 (266, 1)	4.68941 (266, 1)	3.71719 (257, 1)	1.12855C(329, 1)
230.0 /	7.58578 (342, 1)	6.41031 (342, 1)	4.96640 (342, 1)	3.60930 (342, 1)	.85163 (257, 1)
220.0 /	6.89432 (312, 1)	5.86060 (312, 1)	4.34716 (311, 1)	3.05890 (311, 1)	.67481 (312, 1)
210.0 /	3.83957 (296, 1)	2.96684 (38, 1)	2.20764 (38, 1)	1.61496C(73, 1)	.56083C(247, 1)
200.0 /	2.80666C(288, 1)	2.05097 (258, 1)	1.66954C(71, 1)	1.87356 (309, 1)	.57819C(10, 1)
190.0 /	4.58182 (297, 1)	3.87744C(77, 1)	2.83531C(288, 1)	2.18902C(288, 1)	.51467C(355, 1)
180.0 /	4.66756 (297, 1)	3.65845 (297, 1)	2.70447 (297, 1)	2.19146C(62, 1)	.67629C(56, 1)
170.0 /	2.86259 (11, 1)	2.28518 (11, 1)	1.74253 (11, 1)	1.30237 (111, 1)	.39413 (111, 1)
160.0 /	4.22522 (59, 1)	3.29249 (59, 1)	2.82497 (26, 1)	2.09872C(8, 1)	.35334C(8, 1)
150.0 /	3.97405 (60, 1)	3.07105 (60, 1)	2.37000 (53, 1)	1.78375 (53, 1)	.45344C(174, 1)
140.0 /	4.40778 (59, 1)	3.44610 (59, 1)	2.56389C(37, 1)	1.99771C(37, 1)	.53987 (60, 1)
130.0 /	4.35861C(233, 1)	3.31433C(233, 1)	2.67561 (156, 1)	2.25118C(237, 1)	.77002C(51, 1)
120.0 /	6.10041 (181, 1)	5.05314C(234, 1)	3.84446C(234, 1)	2.77224C(234, 1)	.60169C(112, 1)
110.0 /	4.68773C(180, 1)	3.58038C(180, 1)	2.87572C(37, 1)	2.22727C(37, 1)	.51195C(237, 1)
100.0 /	4.51878C(185, 1)	3.62466C(185, 1)	2.75753C(185, 1)	1.99029C(185, 1)	.35793 (165, 1)
90.0 /	3.32751C(185, 1)	2.87234C(169, 1)	2.11104C(169, 1)	1.70361C(184, 1)	.55971C(50, 1)
80.0 /	3.97092 (84, 1)	2.85016 (84, 1)	2.15265C(73, 1)	1.59943C(73, 1)	.41379C(214, 1)
70.0 /	2.75835C(263, 1)	2.34761C(235, 1)	1.94638C(19, 1)	1.81114C(19, 1)	.58966C(19, 1)
60.0 /	3.19403 (227, 1)	2.68960C(74, 1)	2.30946C(74, 1)	1.85620C(74, 1)	.45496 (172, 1)
50.0 /	5.84860C(176, 1)	4.80287C(176, 1)	3.69427C(176, 1)	2.71709C(176, 1)	.62855C(174, 1)
40.0 /	3.76530 (58, 1)	3.12160 (99, 1)	2.38067 (128, 1)	1.92159 (58, 1)	.44046C(235, 1)
30.0 /	4.31731 (95, 1)	3.43422C(18, 1)	2.73293C(18, 1)	2.05033C(18, 1)	.39900C(18, 1)
20.0 /	3.55750 (264, 1)	2.87607 (264, 1)	2.22780C(333, 1)	1.99526C(333, 1)	.60398C(333, 1)
10.0 /	2.87396C(239, 1)	2.24898 (59, 1)	2.23547 (363, 1)	1.63633 (363, 1)	.37105 (4, 1)
360.0 /	5.29759C(239, 1)	3.45769C(239, 1)	2.78718C(364, 1)	2.16244C(364, 1)	.46104 (59, 1)

RUN ENDED ON 10-19-90 AT 12:41:17

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-41

ISC-ST MODEL RUN

FOR

1984 FOR INORGANIC WASTE TREATMENT SYSTEM STACK

AT EXHAUST GAS FLOW RATES OF 6,000 ACFM AND 1,000 ACFM

```
1            ISCST - VERSION 3.4 (DATED 88348)

             IBM-PC VERSION (1.64)
             (C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
             SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
             RUN BEGAN ON 08-23-90 AT 17:53:29

1
                  *** IWT Case 1--1984                                           ***

         CALCULATE (CONCENTRATION=1,DEPOSITION=2)                          ISW(1) =   1
         RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)           ISW(2) =   4
         DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)                  ISW(3) =   1
         TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                          ISW(4) =   0
         CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                     ISW(5) =   0
         LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)                  ISW(6) =   1

         COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
         WITH THE FOLLOWING TIME PERIODS:
           HOURLY (YES=1,NO=0)                                             ISW(7) =   1
           2-HOUR (YES=1,NO=0)                                             ISW(8) =   0
           3-HOUR (YES=1,NO=0)                                             ISW(9) =   1
           4-HOUR (YES=1,NO=0)                                            ISW(10) =   0
           6-HOUR (YES=1,NO=0)                                            ISW(11) =   0
           8-HOUR (YES=1,NO=0)                                            ISW(12) =   1
           12-HOUR (YES=1,NO=0)                                           ISW(13) =   0
           24-HOUR (YES=1,NO=0)                                           ISW(14) =   1
         PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                              ISW(15) =   1

         PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
         SPECIFIED BY ISW(7) THROUGH ISW(14):
           DAILY TABLES (YES=1,NO=0)                                      ISW(16) =   0
           HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)                   ISW(17) =   1
           MAXIMUM 50 TABLES (YES=1,NO=0)                                 ISW(18) =   0
         METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)        ISW(19) =   1
         RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3) ISW(20) =   0
         WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)        ISW(21) =   1
         VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3) ISW(22) =   1
         SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)                ISW(23) =   0
         PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)            ISW(24) =   1
         PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)      ISW(25) =   2
         PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)            ISW(26) =   1
         CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)          ISW(27) =   1
         REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                          ISW(28) =   1
         TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)                 ISW(29) =   2
         DEBUG OPTION CHOSEN (YES=1,NO=2)                                 ISW(30) =   2
         ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)              ISW(31) =   0

         NUMBER OF INPUT SOURCES                                           NSOURC =   1
         NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                          NGROUP =   0
         TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)              IPERD =   0
         NUMBER OF X (RANGE) GRID VALUES                                   NXPNTS =  10
         NUMBER OF Y (THETA) GRID VALUES                                   NYPNTS =  36
         NUMBER OF DISCRETE RECEPTORS                                      NXWYPT =   0
         SOURCE EMISSION RATE UNITS CONVERSION FACTOR                          TK =.10000E+07
         HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED                  ZR =  10.00  METERS
         LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA                          IMET =   9
         DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION               DECAY = .000000E+00
         SURFACE STATION NO.                                                  ISS = 12842
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YEAR OF SURFACE DATA	ISY = 84
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 84
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 8613 WORDS

1 *** IWT Case 1--1984 ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

1 *** IWT Case 1--1984 ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

313.0, 407.0, 532.0, 720.0, 939.0, 1221.0, 1628.0, 2128.0, 2817.0, 6000.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

```
360.0,   10.0,   20.0,   30.0,   40.0,   50.0,   60.0,   70.0,   80.0,   90.0,
100.0,  110.0,  120.0,  130.0,  140.0,  150.0,  160.0,  170.0,  180.0,  190.0,
200.0,  210.0,  220.0,  230.0,  240.0,  250.0,  260.0,  270.0,  280.0,  290.0,
300.0,  310.0,  320.0,  330.0,  340.0,  350.0,
```

1

*** IWT Case 1--1984 ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	.10000E+01	.0	.0	.0	30.48	293.15	9.70	.61	.00	.00	.00

```
* CALM HOURS (=1) FOR DAY   3 *  1 1 1 1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY   4 *  1 0 1 1 1 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 1 0 1 1
* CALM HOURS (=1) FOR DAY   5 *  1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
* CALM HOURS (=1) FOR DAY   6 *  1 1 1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0
* CALM HOURS (=1) FOR DAY   7 *  0 1 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY   8 *  0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  25 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
* CALM HOURS (=1) FOR DAY  26 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0
* CALM HOURS (=1) FOR DAY  28 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1
* CALM HOURS (=1) FOR DAY  29 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1
* CALM HOURS (=1) FOR DAY  30 *  1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  33 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  34 *  0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  37 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
* CALM HOURS (=1) FOR DAY  38 *  1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  44 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 1 1
* CALM HOURS (=1) FOR DAY  45 *  1 0 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
* CALM HOURS (=1) FOR DAY  47 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1
* CALM HOURS (=1) FOR DAY  48 *  0 0 1 0 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1
* CALM HOURS (=1) FOR DAY  49 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  50 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0
* CALM HOURS (=1) FOR DAY  51 *  1 0 1 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  52 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
* CALM HOURS (=1) FOR DAY  54 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1
* CALM HOURS (=1) FOR DAY  55 *  1 0 1 1 1 0 0 1 1 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  56 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0
* CALM HOURS (=1) FOR DAY  61 *  0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1
* CALM HOURS (=1) FOR DAY  62 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1
* CALM HOURS (=1) FOR DAY  63 *  1 0 1 1 1 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  64 *  0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  69 *  1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
* CALM HOURS (=1) FOR DAY  73 *  0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1
* CALM HOURS (=1) FOR DAY  76 *  0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1
```

* CALM HOURS (=1) FOR DAY 77 *	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 78 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 79 *	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 82 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 83 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 84 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 85 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 86 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 91 *	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 92 *	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 93 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 97 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 98 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 99 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 102 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 103 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 104 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 106 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 110 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 111 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 112 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 115 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 119 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 121 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 122 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 123 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 128 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 133 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 134 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 136 *	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 142 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 143 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 146 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 147 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 148 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 153 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 154 *	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 156 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 165 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 167 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 171 *	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 172 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 173 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 179 *	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 182 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 186 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 187 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 189 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 190 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 192 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 194 *	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 195 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 196 *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 197 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 198 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 200 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 201 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 202 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 204 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 212 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 218 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 219 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 220 *	0	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 222 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 223 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 224 *	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 225 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 230 *	0	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 231 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	1	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 239 *	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 244 *	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 247 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 248 *	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 250 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 253 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 255 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 256 *	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 257 *	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 258 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

* CALM HOURS (=1) FOR DAY 273 *	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 277 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 278 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 279 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 289 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 290 *	0	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 291 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 292 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 295 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 296 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 298 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 301 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 302 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 304 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 305 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 308 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
* CALM HOURS (=1) FOR DAY 310 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 315 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 321 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 325 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 331 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 334 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 336 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 337 *	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 338 *	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 339 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 342 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 343 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 344 *	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 345 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 346 *	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 347 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
* CALM HOURS (=1) FOR DAY 348 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 349 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 356 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 357 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 358 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 360 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 365 *	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 366 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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'N'-DAY
366 DAYS.
SGROUP# 1

* 366-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS .94547 AND OCCURRED AT (532.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0	1221.0	1628.0	2128.0	2817.0
350.0 /	.25505	.24963	.22457	.18636	.15075	.11708	.08687	.06451	.04611
340.0 /	.29634	.28160	.24423	.19447	.15257	.11555	.08358	.06069	.04246
330.0 /	.39824	.37941	.32701	.25611	.19784	.14861	.10724	.07801	.05480
320.0 /	.53739	.53074	.47521	.38801	.30911	.23754	.17478	.12891	.09149
310.0 /	.63166	.64433	.59579	.50380	.41340	.32607	.24580	.18442	.13255
300.0 /	.61726	.66784	.66557	.61260	.53845	.45138	.36170	.28490	.21324
290.0 /	.49819	.52441	.51511	.47844	.43248	.37574	.31338	.25473	.19541
280.0 /	.58457	.64889	.66762	.63220	.56115	.46824	.37024	.28746	.21229
270.0 /	.69963	.79010	.81334	.76421	.67545	.56471	.44930	.35129	.26120
260.0 /	.67821	.76535	.78432	.73323	.64916	.54701	.44060	.34844	.26153
250.0 /	.70249	.81585	.87082	.85453	.78617	.68344	.56670	.45818	.35016
240.0 /	.79062	.90437	.94547	.91111	.82823	.71049	.57908	.46098	.34762
230.0 /	.65391	.71230	.70822	.65148	.57879	.49510	.40825	.33026	.25287
220.0 /	.50129	.55855	.56992	.53076	.46740	.39174	.31426	.24823	.18644
210.0 /	.35747	.39870	.40326	.36675	.31313	.25329	.19515	.14910	.10899
200.0 /	.27556	.31225	.32094	.29714	.25733	.21086	.16501	.12805	.09502
190.0 /	.27675	.30664	.30425	.26918	.22536	.18138	.14140	.11043	.08273
180.0 /	.26500	.28964	.28670	.26175	.23340	.20277	.17104	.14120	.10998
170.0 /	.24989	.26847	.26093	.23081	.19672	.16213	.12958	.10298	.07812
160.0 /	.26789	.28864	.27766	.23915	.19638	.15443	.11626	.08745	.06316
150.0 /	.26395	.30273	.31124	.28630	.24635	.20066	.15568	.11959	.08774
140.0 /	.26346	.31559	.33750	.32085	.28187	.23313	.18316	.14176	.10447
130.0 /	.27188	.32880	.35499	.34459	.31266	.26962	.22261	.17965	.13711
120.0 /	.28115	.34260	.37047	.35478	.31380	.26226	.20906	.16401	.12234
110.0 /	.30436	.33681	.33726	.30329	.25527	.20200	.15070	.11135	.07872
100.0 /	.47066	.49515	.46719	.39369	.31533	.24028	.17352	.12539	.08723
90.0 /	.63517	.63973	.57349	.45800	.35235	.25964	.18127	.12735	.08641
80.0 /	.64250	.61495	.52560	.40215	.30075	.21679	.14841	.10279	.06896
70.0 /	.64660	.60142	.50120	.37488	.27618	.19675	.13317	.09132	.06067
60.0 /	.59975	.54705	.44930	.33580	.25152	.18424	.12983	.09271	.06404
50.0 /	.48905	.45525	.38705	.30438	.24075	.18760	.14245	.10879	.07986
40.0 /	.43884	.42507	.37292	.29644	.22999	.17208	.12296	.08846	.06141
30.0 /	.40748	.41406	.38091	.31408	.24702	.18504	.13119	.09322	.06379
20.0 /	.36236	.37864	.35849	.30546	.24803	.19213	.14140	.10375	.07310
10.0 /	.27243	.28064	.26424	.22575	.18370	.14158	.10295	.07449	.05177
360.0 /	.23832	.24141	.22486	.19100	.15553	.12087	.08953	.06626	.04713

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'N'-DAY
366 DAYS
SGROUP# 1

*** IWT Case 1--1984 ***

* 366-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS .94547 AND OCCURRED AT (532.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 6000.0
350.0 /	.01751
340.0 /	.01536
330.0 /	.02026
320.0 /	.03412
310.0 /	.05038
300.0 /	.08704
290.0 /	.08305
280.0 /	.08416
270.0 /	.10507
260.0 /	.10686
250.0 /	.14779
240.0 /	.14292
230.0 /	.10731
220.0 /	.07666
210.0 /	.04279
200.0 /	.03849
190.0 /	.03435
180.0 /	.04815
170.0 /	.03305
160.0 /	.02417
150.0 /	.03437
140.0 /.	.04112
130.0 /	.05771
120.0 /	.04939
110.0 /	.02847
100.0 /	.03099
90.0 /	.02913
80.0 /	.02284
70.0 /	.01968
60.0 /	.02253
50.0 /	.03193
40.0 /	.02182
30.0 /	.02180
20.0 /	.02664
10.0 /	.01831
360.0 /	.01757

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HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 56.62665 AND OCCURRED AT (720.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	39.68760 (315,12)	40.89778 (249, 9)	36.93389 (249, 9)	36.16098 (105, 9)	36.23391 (105, 9)
340.0 /	47.69848 (355,12)	41.40117 (140,17)	37.40610 (140,17)	37.29830 (228, 9)	37.42523 (228, 9)

330.0 /	47.69848 (345,11)	40.95941 (345,11)	31.47358 (145, 7)	25.11015 (359,17)	23.57351 (129, 6)
320.0 /	44.00554 (277,12)	37.68490 (277,12)	31.07645 (336,10)	31.52156 (18, 7)	29.98960 (18, 7)
310.0 /	45.58730 (189, 9)	43.16084 (309, 8)	40.91225 (309, 8)	32.51313 (236, 8)	30.97568 (236, 8)
300.0 /	47.69848 (345,12)	43.16091 (302,16)	45.57757 (204, 6)	56.62665 (204, 6)	54.02752 (204, 6)
290.0 /	38.90146 (145, 9)	39.42293 (243, 9)	35.55169 (243, 9)	32.95060 (206,17)	32.88029 (206,17)
280.0 /	37.93913 (291,11)	45.89273 (220,19)	43.60344 (220,19)	36.16101 (213, 7)	36.23394 (213, 7)
270.0 /	45.58729 (70,12)	43.16095 (290, 8)	40.91235 (290, 8)	32.95058 (358, 6)	32.88027 (358, 6)
260.0 /	47.45950 (242,10)	47.61160 (98,10)	45.29985 (98,10)	35.09805 (98,10)	30.97568 (17, 7)
250.0 /	42.04676 (250,15)	47.61160 (208,19)	45.29985 (208,19)	35.09805 (208,19)	32.88037 (170,20)
240.0 /	47.45951 (170,18)	45.89275 (283,17)	43.60345 (283,17)	33.72095 (283,17)	30.97568 (260, 8)
230.0 /	47.45951 (91,14)	48.19832 (338,11)	45.87944 (338,11)	37.29830 (347, 8)	37.42523 (347, 8)
220.0 /	47.45951 (241,17)	40.74724 (241,17)	35.55171 (258,17)	37.29831 (73, 1)	37.42523 (73, 1)
210.0 /	46.74922 (195, 9)	40.11686 (195, 9)	30.50867 (190,11)	31.52155 (307,17)	29.98959 (307,17)
200.0 /	44.00558 (193,13)	39.42295 (338,13)	35.55171 (338,13)	31.52150 (220, 8)	29.98953 (220, 8)
190.0 /	44.00558 (342,15)	47.61159 (209,17)	45.29985 (209,17)	35.09804 (209,17)	29.98954 (209,18)
180.0 /	39.76260 (342,15)	35.44621 (257,10)	31.07645 (257,10)	31.50735 (325, 8)	27.97449 (325, 8)
170.0 /	46.74922 (286,15)	43.16092 (347, 9)	40.91232 (347, 9)	31.54177 (347, 9)	26.28977 (219, 8)
160.0 /	37.21186 (31,13)	45.89272 (192, 9)	43.60342 (192, 9)	37.29830 (25,22)	37.42523 (25,22)
150.0 /	38.50623 (202,18)	47.61158 (202,18)	45.29984 (202,18)	35.09803 (202,18)	29.98954 (219,18)
140.0 /	46.74921 (229,16)	43.16094 (201,17)	40.91235 (201,17)	31.54178 (201,17)	29.98959 (209,15)
130.0 /	47.69849 (314,16)	43.16095 (245,10)	40.91235 (245,10)	31.54178 (245,10)	27.11450 (333,11)
120.0 /	37.21189 (292,14)	40.89777 (77,10)	37.41428 (207,17)	32.95065 (207,20)	32.88034 (207,20)
110.0 /	45.58728 (292,14)	39.08631 (292,14)	31.07646 (232,11)	37.29830 (101, 2)	37.42523 (101, 2)
100.0 /	46.74923 (61,16)	40.11686 (61,16)	29.42323 (61,16)	31.52154 (106,12)	29.98957 (106,12)
90.0 /	47.69848 (55,11)	45.89268 (225,19)	43.60340 (225,19)	33.72091 (225,19)	25.45288 (337,17)
80.0 /	47.45950 (188,10)	47.61160 (135, 9)	45.29985 (135, 9)	35.09805 (135, 9)	25.24682 (135, 9)
70.0 /	46.74921 (258,15)	40.11684 (258,15)	33.34158 (274,18)	31.52153 (86,15)	29.98956 (86,15)
60.0 /	46.74922 (308,13)	43.16094 (49,18)	40.91235 (49,18)	31.54178 (49,18)	26.28977 (224, 9)
50.0 /	39.68760 (209,12)	43.16094 (218, 9)	40.91235 (218, 9)	31.54178 (218, 9)	29.98956 (44,16)
40.0 /	39.76262 (163,10)	47.61159 (348,17)	45.29984 (348,17)	35.09804 (348,17)	29.98956 (25, 5)
30.0 /	44.00557 (163,10)	39.42295 (274,15)	35.55170 (274,15)	28.72260 (25,10)	27.21373 (25,10)
20.0 /	47.45951 (230,12)	45.89272 (162,18)	43.60342 (162,18)	33.72093 (162,18)	29.98957 (234,19)
10.0 /	42.04676 (6,11)	40.89777 (193,15)	36.93388 (193,15)	27.59773 (193,15)	25.45286 (346,12)
360.0 /	45.58732 (193,14)	47.61160 (197,18)	45.29984 (197,18)	35.09804 (197,18)	32.88033 (197,16)

1

HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 56.62665 AND OCCURRED AT (720.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	30.87745 (105, 9)	23.77803 (105, 9)	19.41336 (237, 1)	18.37663 (237, 1)	10.77624 (237, 1)
340.0 /	31.94051 (228, 9)	24.64102 (228, 9)	19.41336 (192,21)	18.37663 (192,21)	10.77624 (192,21)
330.0 /	20.92827 (129, 6)	17.40401 (126, 5)	19.41336 (126, 5)	18.37663 (126, 5)	10.77624 (126, 5)
320.0 /	24.80126 (18, 7)	19.62491 (191,22)	16.67722 (194, 1)	15.65682 (194, 1)	8.94617 (194, 1)
310.0 /	25.65522 (236, 8)	20.92067 (237, 7)	18.27216 (357, 4)	17.56492 (357, 4)	10.53620 (357, 4)
300.0 /	45.10311 (204, 6)	35.11161 (204, 6)	27.40899 (204, 6)	21.09538 (204, 6)	10.77624 (135, 1)
290.0 /	27.89377 (206,17)	21.36452 (206,17)	19.41336 (217,22)	18.37663 (217,22)	10.77624 (217,22)
280.0 /	30.87748 (213, 7)	25.73192 (169,20)	21.68048 (169,20)	18.37663 (215, 4)	10.77624 (215, 4)
270.0 /	27.89375 (358, 6)	25.73192 (289, 7)	21.68048 (289, 7)	18.37663 (172, 2)	10.77624 (172, 2)
260.0 /	27.77007 (259, 8)	25.73192 (259, 8)	21.68048 (259, 8)	18.37663 (167, 1)	10.77624 (167, 1)

250.0 /	27.89384 (170,20)	25.73192 (242, 7)	21.68048 (242, 7)	18.37663 (257, 7)	10.77624 (257, 7)
240.0 /	27.77008 (197, 6)	25.73192 (197, 6)	21.68048 (197, 6)	18.37663 (147,24)	10.77624 (147,24)
230.0 /	31.94051 (347, 8)	25.73192 (193, 7)	21.68048 (193, 7)	18.37663 (167, 3)	10.77624 (167, 3)
220.0 /	31.94051 (73, 1)	24.64102 (73, 1)	19.41336 (190, 4)	18.37663 (190, 4)	10.77624 (190, 4)
210.0 /	26.13371 (189,21)	24.13826 (189,21)	20.27229 (189,21)	15.76537 (189,21)	8.94609 (144, 3)
200.0 /	24.80121 (220, 8)	19.62483 (204,21)	17.12947 (276, 5)	17.66369 (276, 5)	11.60979 (276, 5)
190.0 /	24.80121 (209,18)	19.62484 (207,21)	16.10452 (207,21)	15.33024 (353,24)	9.84097 (353,24)
180.0 /	23.54227 (77, 9)	20.92067 (273,22)	19.41336 (355,20)	18.37663 (355,20)	10.77624 (355,20)
170.0 /	21.40783 (219, 8)	16.49535 (151,21)	16.67709 (103,21)	15.65669 (103,21)	8.94608 (103,21)
160.0 /	31.94051 (25,22)	24.64102 (25,22)	18.37943 (25,22)	15.65670 (309,20)	8.94608 (309,20)
150.0 /	24.80122 (219,18)	18.68562 (219,18)	13.83977 (121,22)	12.52846 (121,22)	7.41340 (4,22)
140.0 /	24.80126 (209,15)	19.62486 (136,20)	16.67721 (247,21)	15.65680 (247,21)	8.94615 (247,21)
130.0 /	26.13376 (359,20)	24.13831 (359,20)	20.27233 (359,20)	18.37663 (253,23)	10.77624 (253,23)
120.0 /	27.89382 (207,20)	21.36456 (207,20)	16.20915 (230,21)	14.91479 (230,21)	8.39174 (230,21)
110.0 /	31.94051 (101, 2)	24.64102 (101, 2)	18.37943 (101, 2)	14.17292 (86, 5)	8.51199 (86, 5)
100.0 /	26.13375 (288,18)	24.13829 (288,18)	20.27231 (288,18)	15.76539 (288,18)	8.94612 (255,21)
90.0 /	22.00984 (229,20)	19.62488 (229,20)	16.67717 (224, 4)	15.65676 (224, 4)	8.94613 (224, 4)
80.0 /	22.00986 (44,21)	19.62489 (44,21)	16.10457 (44,21)	13.66353 (5,22)	9.28403 (5,22)
70.0 /	24.80124 (86,15)	19.62487 (26,18)	16.20915 (289,19)	14.91480 (289,19)	8.39174 (289,19)
60.0 /	21.77798 (217,21)	19.92275 (217,21)	16.57077 (217,21)	14.91480 (248,21)	9.33677 (7, 3)
50.0 /	24.80124 (44,16)	19.92279 (274,20)	19.41336 (225,22)	18.37663 (225,22)	10.77624 (225,22)
40.0 /	24.80123 (25, 5)	18.68563 (25, 5)	16.67715 (290, 1)	15.65674 (290, 1)	8.94611 (290, 1)
30.0 /	22.40449 (25,10)	16.78898 (25,10)	13.83977 (113,22)	12.52846 (113,22)	6.88421 (113,22)
20.0 /	24.80125 (234,19)	18.68564 (234,19)	16.19624 (5, 9)	13.37221 (5, 9)	6.96652 (24,24)
10.0 /	22.00981 (196,21)	19.62485 (196,21)	16.10454 (196,21)	12.32004 (196,21)	5.81463 (142,23)
360.0 /	27.89380 (197,16)	21.36455 (197,16)	16.67718 (111,21)	15.65678 (111,21)	8.94614 (111,21)

1

2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 47.61160 AND OCCURRED AT (407.0, 260.0) *

DIRECTION /	RANGE (METERS)				
(DEGREES) /	313.0	407.0	532.0	720.0	939.0
350.0 /	37.21184 (63,15)	34.16911 (202,13)	30.50859 (337,13)	36.16098 (302, 1)	36.23391 (302, 1)
340.0 /	45.58731 (63,15)	40.95941 (355,12)	35.55173 (289, 9)	31.52152 (217,19)	29.98956 (217,19)
330.0 /	46.74922 (314,14)	40.11685 (314,14)	30.06779 (345,11)	24.59347 (83, 7)	23.14103 (83, 7)
320.0 /	37.93910 (358,13)	35.44621 (336,10)	28.06996 (119, 8)	28.72269 (18, 8)	27.21381 (18, 8)
310.0 /	39.76266 (277,12)	39.08632 (189, 9)	33.35905 (202, 7)	31.54169 (309, 8)	26.28977 (171, 8)
300.0 /	38.90147 (192,16)	40.95942 (345,12)	40.91232 (302,16)	36.16101 (204,22)	36.23394 (204,22)
290.0 /	38.90146 (204, 9)	35.43874 (195, 8)	33.34165 (195, 8)	32.95052 (257, 9)	32.88021 (257, 9)
280.0 /	37.21188 (70,12)	43.16090 (51,11)	40.91231 (51,11)	36.16101 (345, 9)	36.23394 (345, 9)
270.0 /	39.48971 (146,10)	41.40117 (188, 8)	37.41424 (203, 7)	31.54179 (290, 8)	27.96015 (165, 8)
260.0 /	38.50624 (98,10)	47.61160 (315, 9)	45.29985 (315, 9)	35.09805 (315, 9)	30.97568 (50, 7)
250.0 /	39.48970 (236,10)	43.16089 (182,18)	40.91229 (182,18)	32.95067 (170,20)	32.88037 (358, 9)
240.0 /	42.04676 (250,15)	45.89273 (216,18)	43.60344 (216,18)	33.72095 (216,18)	30.97568 (315, 8)
230.0 /	47.45951 (188, 9)	40.89777 (220,17)	36.93388 (220,17)	35.56913 (338,11)	33.09632 (234, 8)
220.0 /	47.45950 (259,11)	40.74723 (259,11)	30.50868 (219,16)	32.95065 (195, 7)	32.88033 (195, 7)
210.0 /	39.76260 (224,12)	34.16909 (293,16)	30.50867 (286,16)	28.42374 (25,24)	26.28977 (25,24)
200.0 /	34.53995 (338,13)	37.68493 (193,13)	29.91408 (78,10)	27.55691 (343, 9)	25.45287 (343, 9)
190.0 /	39.76261 (193,13)	37.68493 (342,15)	31.47358 (71,13)	31.52150 (209,18)	25.45285 (11,24)
180.0 /	32.46535 (257,10)	34.16909 (55,10)	29.91408 (55,10)	28.42374 (155, 8)	27.96012 (77, 9)

170.0 /	45.58730 (31,13)	40.11685 (286,15)	29.91407 (229,10)	28.42374 (219, 8)	23.14116 (293,17)
160.0 /	37.15654 (192, 9)	40.89776 (201,14)	36.93387 (201,14)	33.72093 (192, 9)	27.21371 (227,18)
150.0 /	37.15655 (320,17)	45.89272 (320,17)	43.60343 (320,17)	33.72094 (320,17)	25.24681 (202,18)
140.0 /	36.62890 (245,15)	40.89776 (189,19)	36.93388 (189,19)	31.52155 (209,15)	27.96014 (225,20)
130.0 /	36.62889 (155,10)	40.95942 (314,16)	31.07647 (204,17)	30.13719 (333,11)	26.28977 (101, 3)
120.0 /	35.79235 (77,10)	39.60004 (207,17)	37.41425 (224,11)	31.52153 (47,18)	29.98956 (47,18)
110.0 /	37.21189 (335,13)	35.44622 (232,11)	29.91409 (292,16)	37.29830 (146,20)	37.42523 (146,20)
100.0 /	45.58728 (335,13)	39.08631 (335,13)	28.63564 (335,13)	28.10603 (174, 6)	27.63801 (174, 6)
90.0 /	38.90146 (51,13)	40.95941 (55,11)	30.06779 (55,11)	27.55692 (337,17)	24.21161 (225,19)
80.0 /	38.90146 (257,11)	40.74724 (188,10)	37.41427 (46,18)	28.71966 (46,18)	23.09709 (6,17)
70.0 /	37.93914 (290,12)	35.88213 (321,16)	31.47358 (321,16)	28.72262 (196,19)	27.21375 (196,19)
60.0 /	39.68760 (194,11)	40.11686 (308,13)	35.55170 (230,13)	28.42374 (224, 9)	23.14113 (44,14)
50.0 /	36.62892 (170,10)	37.07887 (338,16)	33.35900 (338,16)	31.52153 (44,16)	29.98956 (86,16)
40.0 /	38.50624 (348,17)	43.16093 (207,19)	40.91234 (207,19)	31.54178 (207,19)	27.21372 (335,17)
30.0 /	44.00556 (102,15)	37.68492 (163,10)	27.56607 (163,10)	28.72258 (148,16)	27.21371 (148,16)
20.0 /	42.04676 (6,11)	40.89776 (172, 9)	36.93387 (172, 9)	31.52154 (234,19)	27.21372 (274,13)
10.0 /	39.76260 (204,10)	39.42294 (195,13)	35.55170 (195,13)	27.55690 (346,12)	21.25039 (196,21)
360.0 /	44.00558 (204,10)	39.08635 (193,14)	28.63566 (193,14)	32.95064 (197,16)	29.99027 (85, 8)

1

2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 47.61160 AND OCCURRED AT (407.0, 260.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	30.87745 (302, 1)	23.77803 (302, 1)	17.70358 (105, 9)	12.70706 (99,20)	6.96654 (99,20)
340.0 /	24.80123 (217,19)	19.62487 (230, 5)	18.37943 (228, 9)	13.02639 (228, 9)	6.88421 (142, 4)
330.0 /	18.90884 (83, 7)	17.02558 (129, 6)	13.83977 (119, 4)	12.52846 (119, 4)	6.88421 (119, 4)
320.0 /	22.40456 (18, 8)	18.68566 (18, 7)	16.67710 (110,23)	15.65669 (110,23)	8.94608 (110,23)
310.0 /	23.38828 (237, 7)	19.62484 (233,24)	17.22330 (237, 7)	14.91480 (141, 1)	8.39174 (141, 1)
300.0 /	30.87748 (204,22)	25.73192 (226, 7)	21.68048 (226, 7)	18.37663 (135, 1)	10.40956 (204, 6)
290.0 /	27.89369 (257, 9)	21.36446 (257, 9)	16.67707 (136, 5)	15.65666 (136, 5)	9.53321 (34, 7)
280.0 /	30.87748 (345, 9)	24.13823 (215,20)	20.27226 (215,20)	16.92234 (169,20)	8.94619 (187, 2)
270.0 /	27.77008 (289, 7)	21.36451 (358, 6)	19.41336 (172, 2)	18.37663 (209, 5)	10.77624 (209, 5)
260.0 /	25.65521 (17, 7)	20.92067 (166,21)	19.41336 (167, 1)	18.37663 (304, 2)	10.77624 (304, 2)
250.0 /	27.89384 (358, 9)	24.13830 (190,21)	20.27232 (190,21)	18.37663 (308, 5)	10.77624 (308, 5)
240.0 /	25.65522 (260, 8)	21.39765 (364, 8)	19.41336 (147,24)	18.37663 (209,22)	10.77624 (209,22)
230.0 /	29.19471 (234, 8)	24.64102 (347, 8)	19.41336 (167, 3)	18.37663 (260, 5)	10.77624 (260, 5)
220.0 /	27.89381 (195, 7)	21.36455 (195, 7)	19.41336 (193, 6)	18.37663 (193, 6)	10.77624 (193, 6)
210.0 /	24.80126 (307,17)	20.92067 (307,20)	17.22330 (307,20)	15.65671 (144, 3)	8.25193 (321,23)
200.0 /	22.00979 (204,21)	18.68561 (220, 8)	16.10452 (204,21)	12.95533 (354,22)	7.82374 (354,22)
190.0 /	22.00980 (207,21)	18.68562 (209,18)	15.69708 (283, 4)	14.96532 (283, 4)	8.74684 (283, 4)
180.0 /	23.38828 (273,22)	17.86961 (77, 9)	17.22330 (273,22)	15.65667 (146, 1)	8.94607 (146, 1)
170.0 /	19.43486 (151, 6)	15.96032 (219, 8)	13.92410 (291,20)	13.06199 (357,24)	8.16976 (357,24)
160.0 /	22.40447 (227,18)	16.78897 (227,18)	16.67710 (309,20)	14.91480 (290,20)	8.42276 (76,22)
150.0 /	18.87724 (210,20)	16.49536 (210,20)	13.71318 (219,18)	10.78744 (4,22)	6.88421 (121,22)
140.0 /	23.54229 (225,20)	18.68566 (209,15)	16.20915 (338,20)	14.91480 (338,20)	8.39174 (338,20)
130.0 /	22.04899 (333,11)	17.40401 (253,23)	19.41336 (253,23)	15.76540 (359,20)	8.94611 (17,19)
120.0 /	24.80124 (47,18)	18.68564 (47,18)	15.82023 (207,20)	12.70710 (223,21)	8.03442 (98, 1)
110.0 /	31.94051 (146,20)	24.64102 (146,20)	18.37943 (146,20)	13.02639 (101, 2)	5.71505 (117,20)
100.0 /	24.80124 (106,12)	19.92284 (86,19)	16.67716 (255,21)	15.65675 (255,21)	6.72249 (288,18)

90.0 /	20.69524 (337,17)	17.58455 (194,20)	16.10456 (229,20)	12.52846 (231, 5)	6.88421 (231, 5)
80.0 /	22.00986 (255, 8)	19.62489 (255, 8)	16.10457 (255, 8)	12.32007 (44,21)	5.12637 (44,21)
70.0 /	22.40450 (196,19)	18.68563 (86,15)	16.10455 (26,18)	12.70711 (79,20)	6.96657 (79,20)
60.0 /	21.40783 (224, 9)	16.19729 (19, 7)	16.20915 (248,21)	13.81670 (7, 3)	8.39174 (248,21)
50.0 /	24.80123 (86,16)	18.68564 (44,16)	16.67714 (194,22)	15.65673 (194,22)	8.94611 (194,22)
40.0 /	22.40448 (335,17)	16.78898 (335,17)	16.67711 (226, 1)	15.65671 (226, 1)	8.94610 (226, 1)
30.0 /	22.40447 (148,16)	16.78897 (148,16)	13.35925 (27, 3)	10.12512 (27, 3)	4.82712 (182, 5)
20.0 /	22.40448 (274,13)	17.74588 (5, 9)	13.92410 (24,24)	12.70703 (24,24)	6.88421 (189, 1)
10.0 /	20.69522 (346,12)	16.49535 (18,21)	13.35923 (18,21)	10.75044 (142,23)	5.71503 (85,21)
360.0 /	24.81541 (85, 8)	18.79289 (85, 8)	15.82022 (197,16)	12.70710 (119, 5)	6.96657 (119, 5)

1

HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 29.74472 AND OCCURRED AT (313.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	17.49692 (103, 5)	14.83604 (200, 3)	15.53153 (200, 3)	13.77326 (200, 3)	12.07797C(105, 3)
340.0 /	18.51027 (127, 3)	18.26604 (127, 3)	15.91984 (127, 3)	13.42203 (166, 6)	12.47508 (228, 3)
330.0 /	23.76341 (356, 4)	22.45670 (356, 4)	17.90844 (356, 4)	15.37805 (364, 6)	12.40503 (364, 6)
320.0 /	26.50717 (292, 4)	23.67507 (292, 4)	18.16108 (292, 4)	20.08142 (18, 3)	19.06780 (18, 3)
310.0 /	25.17640 (189, 3)	24.36982 (189, 3)	21.21922 (202, 3)	16.93951 (202, 3)	13.65174C(237, 3)
300.0 /	20.23396 (210, 4)	19.46134 (302, 6)	23.08840 (302, 6)	23.66582 (302, 6)	21.46613 (302, 6)
290.0 /	20.42757 (163, 3)	21.22184 (163, 3)	19.78480 (163, 3)	16.28182 (163, 3)	13.68667 (206, 6)
280.0 /	20.35206 (197, 3)	19.61887 (204, 3)	19.80913C(51, 4)	17.68081C(51, 4)	14.34582 (213, 3)
270.0 /	24.24916 (207, 4)	22.51236 (211, 6)	21.12456 (49, 4)	17.43629 (49, 4)	13.33920 (49, 4)
260.0 /	24.83599 (70, 4)	19.96069 (70, 4)	16.00749 (306, 5)	16.17923 (363, 2)	14.62054 (363, 2)
250.0 /	20.37283 (46, 4)	20.69153 (46, 4)	17.26973 (46, 4)	18.05688 (274, 2)	18.23161 (26, 1)
240.0 /	23.11957C(283, 6)	28.49759C(283, 6)	27.00590C(283, 6)	20.81354C(283, 6)	19.28781 (353, 6)
230.0 /	22.79288 (250, 4)	18.51338 (250, 4)	16.14014 (188, 3)	17.94424 (16, 3)	16.77026 (16, 3)
220.0 /	22.61553 (192, 4)	18.24156 (250, 4)	16.74187 (4, 4)	17.35551 (14, 2)	15.49085 (14, 2)
210.0 /	21.01710 (190, 4)	20.20329 (190, 4)	16.38822 (190, 4)	13.71318 (330, 2)	12.17304 (270, 8)
200.0 /	20.73872 (342, 4)	18.81758 (342, 4)	14.51734 (342, 4)	12.98560 (12, 1)	11.73982 (12, 1)
190.0 /	29.74472 (342, 5)	25.80543 (342, 5)	23.59753 (209, 6)	22.20656 (209, 6)	18.41214 (209, 6)
180.0 /	27.47108 (342, 5)	23.85352 (342, 5)	17.74635 (342, 5)	11.65472 (32, 6)	10.04659 (325, 3)
170.0 /	20.45644 (61, 4)	18.71287 (151, 3)	15.74180 (151, 3)	11.42448 (32, 6)	9.76039 (130, 7)
160.0 /	20.98368 (229, 4)	18.85692 (293, 5)	14.94528 (293, 5)	13.79742 (19, 4)	12.47508 (25, 8)
150.0 /	17.49638 (228, 6)	18.99985 (202, 6)	20.12051 (202, 6)	17.46984 (202, 6)	14.08939 (67, 3)
140.0 /	17.27821 (229, 6)	17.78828 (229, 6)	18.48298 (189, 7)	16.36614 (189, 7)	13.63038 (136, 7)
130.0 /	16.09507 (314, 6)	14.84769 (221, 6)	13.63745 (245, 4)	12.17873 (341, 6)	12.05539 (155, 7)
120.0 /	20.73088 (77, 4)	20.64070 (77, 4)	17.17717 (77, 4)	14.04572 (101, 3)	12.08346 (27, 8)
110.0 /	20.88823 (226, 4)	14.28827 (222, 5)	13.68172 (101, 6)	14.42923 (101, 6)	13.39025 (101, 1)
100.0 /	19.45557 (245, 6)	20.21551 (245, 6)	18.81223 (245, 6)	15.41923 (245, 6)	11.86112 (245, 6)
90.0 /	28.51566 (154, 4)	22.57934 (154, 4)	15.70525 (154, 4)	16.63565 (177, 7)	14.63594 (177, 7)
80.0 /	27.49159 (188, 4)	21.14689 (188, 4)	17.63073 (46, 6)	13.18702 (46, 6)	10.99166 (26, 6)
70.0 /	25.32878 (309, 4)	22.08856 (50, 6)	26.52521 (86, 5)	27.26858 (86, 5)	23.83714 (86, 5)
60.0 /	22.17084 (194, 4)	17.20291 (194, 4)	13.63745 (49, 6)	11.76776 (50, 6)	10.24323 (175, 2)
50.0 /	24.96518 (238, 5)	18.49930 (238, 5)	16.37921 (289, 6)	15.39238 (289, 6)	14.42362 (56, 3)
40.0 /	20.44440 (357, 4)	19.39804 (357, 4)	15.63471C(348, 6)	16.39573 (274, 6)	15.42744 (274, 6)
30.0 /	18.76543 (102, 5)	16.95287 (102, 6)	15.69043 (25, 4)	18.84581 (25, 4)	17.61914 (25, 4)
20.0 /	24.92287 (102, 5)	20.87233 (102, 5)	15.02079 (102, 5)	11.67708 (113, 6)	9.99652C(234, 7)

10.0 /	18.55607 (193, 5)	19.15542 (193, 5)	16.21277 (193, 5)	13.10183 (65, 6)	11.21754 (65, 6)
360.0 /	17.97935 (193, 5)	20.05713 (197, 6)	23.26302 (197, 6)	22.68289 (197, 6)	19.37572 (197, 6)

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HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 29.74472 AND OCCURRED AT (313.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	10.29249C(105, 3)	7.92601C(105, 3)	6.47147 (237, 1)	6.12574 (237, 1)	3.59210 (237, 1)
340.0 /	10.64684 (228, 3)	8.21367 (228, 3)	6.47133C(192, 7)	6.12563C(192, 7)	3.59209C(192, 7)
330.0 /	9.27875 (364, 6)	7.77643 (183, 1)	6.97047 (183, 1)	6.12707 (126, 2)	3.59231 (126, 2)
320.0 /	15.73527 (18, 3)	11.82490 (18, 3)	8.65586 (18, 3)	6.03954 (18, 3)	3.01561 (110, 8)
310.0 /	12.76423C(237, 3)	10.61672C(237, 3)	10.01631 (293, 1)	9.14775 (293, 1)	5.09198 (293, 1)
300.0 /	18.32943 (226, 3)	14.93760 (226, 3)	11.65684 (226, 3)	8.60668 (226, 3)	4.64434 (126, 8)
290.0 /	11.38942 (206, 6)	10.90707 (215, 2)	10.00959 (215, 2)	8.34240 (215, 2)	4.03098 (215, 2)
280.0 /	11.75391 (213, 3)	9.27839 (203, 1)	8.35083 (302, 8)	6.87810 (302, 8)	3.59215 (215, 2)
270.0 /	11.54411 (168, 1)	9.86389 (213, 1)	9.09446 (213, 1)	8.05918 (198, 1)	4.30675 (198, 1)
260.0 /	11.84588 (209, 2)	10.84649 (304, 1)	11.87417 (304, 1)	11.09714 (304, 1)	6.38933 (304, 1)
250.0 /	16.00073 (26, 1)	12.64898 (26, 1)	12.98571 (297, 1)	11.82587 (297, 1)	6.44753 (297, 1)
240.0 /	17.04686 (353, 6)	13.65565 (353, 6)	10.95107 (355, 3)	9.51763 (315, 2)	5.88860 (315, 2)
230.0 /	14.22481 (193, 3)	12.22045 (193, 3)	10.04444 (281, 1)	9.20729 (281, 1)	5.11943 (281, 1)
220.0 /	13.29879 (285, 7)	11.33868 (285, 7)	9.02045 (285, 7)	6.73607 (285, 7)	3.59208C(190, 2)
210.0 /	10.97447 (270, 8)	8.87035 (270, 8)	6.83903 (270, 8)	5.25512 (189, 7)	2.98203 (144, 1)
200.0 /	10.21834 (273, 8)	8.33914 (273, 8)	6.47303 (273, 8)	5.88790 (276, 2)	3.86993 (276, 2)
190.0 /	13.99757 (209, 6)	9.84035 (209, 6)	6.86768 (209, 6)	6.09331 (3, 8)	3.84277 (3, 8)
180.0 /	8.21248 (325, 3)	7.19078 (300, 1)	6.47112 (355, 7)	6.12554 (355, 7)	3.59208 (355, 7)
170.0 /	8.74042 (130, 7)	7.16328 (3, 6)	5.64405 (3, 6)	5.21890 (103, 7)	2.98203 (103, 7)
160.0 /	10.64684 (25, 8)	8.21367 (25, 8)	6.12648 (25, 8)	5.21890C(309, 7)	2.98203C(309, 7)
150.0 /	11.08290 (67, 3)	8.86471 (76, 7)	7.42927 (56, 7)	6.44916 (56, 7)	3.34657 (56, 7)
140.0 /	12.59609 (136, 7)	10.39972 (136, 7)	8.13631 (136, 7)	6.00072 (136, 7)	3.10977 (247, 7)
130.0 /	12.24597 (155, 7)	11.35298 (155, 7)	9.79171 (155, 7)	7.82658 (155, 7)	3.65028C(172, 8)
120.0 /	10.56625 (224, 7)	8.65481 (224, 7)	7.92525 (115, 7)	7.49587 (115, 7)	4.36004 (115, 7)
110.0 /	11.51032 (101, 1)	8.90170 (101, 1)	7.46381 (86, 2)	7.11246 (86, 2)	4.10598 (86, 2)
100.0 /	9.68905 (176, 7)	8.04610 (288, 6)	6.75744 (288, 6)	5.25513 (288, 6)	2.98204 (255, 7)
90.0 /	11.53377 (231, 3)	8.93921 (231, 3)	7.61706 (194, 7)	6.03183 (194, 7)	2.98204C(224, 2)
80.0 /	8.75229 (26, 6)	6.54163C(44, 7)	5.36819C(44, 7)	4.55451C(5, 8)	3.09468C(5, 8)
70.0 /	18.79035 (86, 5)	13.65243 (86, 5)	9.77634 (86, 5)	6.71073 (86, 5)	2.80149 (289, 7)
60.0 /	10.00452 (248, 7)	10.26904 (248, 7)	9.48054 (248, 7)	7.96038 (248, 7)	3.92739 (248, 7)
50.0 /	13.77893 (56, 3)	11.71140 (56, 3)	11.11250 (225, 8)	10.36123 (225, 8)	5.91426 (225, 8)
40.0 /	12.60597 (274, 6)	9.36163 (274, 6)	6.77127 (274, 6)	5.30801C(226, 1)	3.00818C(226, 1)
30.0 /	14.40761 (25, 4)	10.75338 (25, 4)	7.83502 (25, 4)	6.06353 (113, 8)	3.21496 (113, 8)
20.0 /	8.26708C(234, 7)	7.69416 (100, 7)	6.84494 (100, 7)	5.56481 (100, 7)	2.86174 (25, 1)
10.0 /	8.73699 (65, 6)	8.03599 (85, 7)	7.31854 (85, 7)	6.06681 (85, 7)	2.91230 (85, 7)
360.0 /	15.02843 (197, 6)	10.73333 (197, 6)	7.57003 (197, 6)	5.62723 (341, 2)	2.98206 (111, 7)

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2ND HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.21712 AND OCCURRED AT (313.0, 320.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	16.70486 (294, 5)	14.81730 (294, 5)	12.31130 (249, 3)	12.05366C(105, 3)	12.07797C(302, 1)
340.0 /	16.16429 (289, 4)	13.80039 (140, 6)	12.46870 (140, 6)	12.43277 (228, 3)	11.76188 (166, 6)
330.0 /	20.53718 (208, 4)	18.86952 (166, 3)	17.10371 (364, 6)	12.19564 (356, 4)	10.49609 (10, 4)
320.0 /	24.21712 (277, 4)	20.10891 (277, 4)	16.27325 (18, 3)	16.01056 (65, 3)	13.89660 (65, 3)
310.0 /	20.92856 (64, 5)	22.25528 (202, 3)	19.71478 (189, 3)	14.39275 (149, 6)	12.61583 (202, 3)
300.0 /	17.77750 (158, 5)	16.90560 (112, 3)	17.99157 (226, 3)	21.45855 (204, 8)	21.39801 (204, 8)
290.0 /	19.58199 (246, 4)	17.40983 (212, 4)	14.97591 (212, 4)	14.22155 (206, 6)	12.56568 (163, 3)
280.0 /	20.09284 (76, 4)	19.46982 (197, 3)	16.60196 (204, 3)	15.42468 (213, 3)	14.07276C(51, 4)
270.0 /	23.73003 (211, 6)	22.34096 (363, 4)	18.63599 (363, 4)	14.84187 (212, 3)	13.24174 (43, 7)
260.0 /	18.36541 (353, 4)	17.90348 (320, 4)	15.62675 (315, 3)	14.66664 (17, 3)	13.65399 (17, 3)
250.0 /	18.65358 (303, 5)	16.20315 (133, 6)	15.71350 (280, 3)	17.74487 (26, 1)	17.15855 (350, 3)
240.0 /	21.37925 (250, 5)	21.87235 (259, 6)	21.41206 (102, 4)	19.48298 (260, 3)	17.14843 (260, 3)
230.0 /	22.04663 (91, 5)	18.39585 (91, 5)	15.96967 (258, 6)	15.51810 (347, 3)	15.18971 (347, 3)
220.0 /	20.82635 (250, 4)	16.83347 (2, 5)	15.61760 (14, 2)	15.83198 (4, 4)	13.63105 (195, 3)
210.0 /	19.63293 (133, 5)	16.48840 (130, 5)	13.89885 (68, 6)	12.84379 (131, 6)	12.14711 (330, 2)
200.0 /	19.66984 (133, 5)	15.66521 (68, 4)	12.81977 (68, 4)	10.50717C(220, 3)	11.22178 (273, 8)
190.0 /	17.90414 (131, 5)	20.73757 (209, 6)	19.20457 (342, 5)	12.27349 (342, 5)	9.36449 (31, 3)
180.0 /	23.78555 (131, 5)	17.56208 (131, 5)	14.27951 (31, 4)	11.32393 (342, 5)	9.32004C(77, 3)
170.0 /	20.09745 (31, 5)	17.90499 (31, 5)	13.63744 (347, 3)	11.14738 (151, 3)	9.67812 (3, 6)
160.0 /	20.75147 (78, 4)	16.91609 (31, 5)	14.53447C(192, 3)	12.43277 (25, 8)	11.94710 (19, 4)
150.0 /	15.21859 (179, 4)	16.17648 (228, 6)	15.44369 (320, 6)	16.16191 (67, 3)	13.71722 (325, 6)
140.0 /	14.23144 (245, 5)	17.44859 (189, 7)	16.97451 (229, 6)	15.13759 (31, 6)	13.33401 (31, 6)
130.0 /	14.77047 (147, 5)	14.38698 (245, 4)	12.91209 (221, 6)	11.17606 (122, 6)	10.74563 (223, 7)
120.0 /	14.35750 (230, 5)	13.20002 (207, 6)	14.50351 (101, 3)	13.74640 (27, 8)	11.88733 (101, 3)
110.0 /	18.16058 (222, 5)	14.07596 (232, 4)	12.26016 (53, 8)	13.16463 (101, 1)	12.52430 (101, 6)
100.0 /	18.78741 (226, 4)	14.87616 (237, 6)	14.44441C(358, 6)	13.92882C(358, 6)	11.72429C(358, 6)
90.0 /	21.65502 (188, 4)	18.18759 (291, 5)	15.57699 (291, 5)	14.63178 (231, 3)	13.65444 (231, 3)
80.0 /	23.52766 (309, 4)	19.43776 (46, 6)	15.09995C(135, 3)	12.45722 (242, 6)	9.68293 (242, 6)
70.0 /	23.90523C(290, 4)	21.18980 (86, 5)	19.57290 (50, 6)	14.84069 (178, 1)	13.05832 (178, 1)
60.0 /	21.71817 (225, 4)	16.66167 (51, 5)	13.28127 (51, 5)	10.83798 (127, 6)	9.63052 (50, 6)
50.0 /	20.32876 (166, 4)	16.81386 (357, 4)	13.63745 (218, 3)	12.50852 (56, 3)	12.77708 (289, 6)
40.0 /	16.92987 (129, 4)	16.55177C(348, 6)	15.56434 (357, 4)	15.48694 (25, 2)	14.57934 (25, 2)
30.0 /	17.34518 (119, 4)	15.79551 (102, 5)	15.31915 (24, 5)	14.35356 (126, 6)	12.11702 (18, 8)
20.0 /	20.06464 (200, 4)	18.05544 (200, 4)	14.85365 (144, 5)	11.53545 (340, 6)	9.91003 (274, 5)
10.0 /	15.79968 (102, 5)	16.15243 (85, 6)	13.59423 (85, 6)	11.51690 (193, 5)	9.13199 (180, 7)
360.0 /	16.12187 (186, 5)	16.06859 (193, 5)	13.19442 (87, 6)	13.16926 (25, 3)	11.83199 (25, 3)

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2ND HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.21712 AND OCCURRED AT (313.0, 320.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0

350.0 /	10.29249C(302, 1)	7.92601C(302, 1)	5.90119C(105, 3)	4.98059 (99, 7)	2.55698 (99, 7)
340.0 /	9.20363 (166, 6)	6.60850 (166, 6)	6.12648 (228, 3)	4.34213 (228, 3)	2.29474 (142, 2)
330.0 /	8.29753 (10, 4)	6.45266 (364, 6)	6.47365 (126, 2)	5.71235 (183, 1)	2.69613 (183, 1)
320.0 /	11.00154 (65, 3)	8.17555 (65, 3)	6.63322 (246, 8)	5.54915 (246, 8)	2.98206C(194, 1)
310.0 /	9.59443 (366, 6)	9.45577 (293, 1)	8.34282C(237, 3)	6.85900 (198, 8)	3.71749 (198, 8)
300.0 /	18.13990 (204, 8)	14.20757 (204, 2)	11.09358 (204, 2)	8.47134 (126, 8)	3.97430 (112, 1)
290.0 /	10.87710 (167, 7)	9.17576 (215, 1)	8.38100 (215, 1)	7.02463 (215, 1)	3.59208C(217, 8)
280.0 /	11.44168 (203, 1)	9.21540 (302, 8)	7.40554 (169, 7)	6.12625 (215, 2)	3.48751 (57, 2)
270.0 /	11.50176 (43, 7)	9.74239 (168, 1)	8.90994 (198, 1)	7.61072 (213, 1)	4.12533 (292, 1)
260.0 /	11.71104 (363, 2)	10.46069 (209, 2)	10.20044C(198, 2)	9.45461C(198, 2)	5.30423C(198, 2)
250.0 /	14.72208 (350, 3)	12.23778 (297, 1)	11.54595 (351, 8)	10.56854 (351, 8)	5.79943 (351, 8)
240.0 /	15.44623 (355, 3)	13.41335 (209, 1)	10.92166 (209, 1)	8.37287 (355, 3)	4.59108 (165, 1)
230.0 /	13.69992 (16, 3)	10.20901 (16, 3)	9.82854 (193, 3)	8.74412 (260, 2)	5.11783 (353, 8)
220.0 /	12.30869 (14, 2)	8.97980 (14, 2)	6.50045 (276, 3)	6.12554C(190, 2)	3.59208C(193, 2)
210.0 /	9.56046 (330, 2)	8.04609 (189, 7)	6.75743 (189, 7)	5.21890 (144, 1)	2.75064 (321, 8)
200.0 /	9.40369 (12, 1)	7.99868 (151, 2)	6.40778 (151, 2)	5.35003 (270, 2)	2.62423 (270, 2)
190.0 /	7.67129 (31, 3)	6.54161 (207, 7)	6.00939 (3, 8)	5.11008 (353, 8)	3.28032 (353, 8)
180.0 /	7.84742C(77, 3)	6.97356 (273, 8)	6.29995 (300, 1)	5.23391 (283, 1)	2.98895 (344, 7)
170.0 /	8.70068 (3, 6)	6.98477 (130, 7)	5.55903 (103, 7)	4.40003 (154, 8)	2.72325C(357, 8)
160.0 /	9.34415 (19, 4)	6.74810 (19, 4)	5.55903C(309, 7)	4.97160 (290, 7)	2.80759C(76, 8)
150.0 /	10.77220 (325, 6)	8.05127 (67, 3)	7.24590 (76, 7)	5.51711 (76, 7)	2.47113C(4, 8)
140.0 /	10.51403 (31, 6)	8.77046 (172, 7)	6.98654 (172, 7)	5.69013 (247, 7)	2.79725C(338, 7)
130.0 /	9.83295 (223, 7)	8.04610 (359, 7)	7.58265C(172, 8)	6.85427C(172, 8)	3.59208C(253, 8)
120.0 /	9.48827 (27, 8)	8.26676 (254, 3)	7.74160 (254, 3)	6.54454 (254, 3)	3.22871 (254, 3)
110.0 /	10.64684 (146, 7)	8.21367 (146, 7)	6.63055 (101, 1)	4.68115 (101, 1)	2.29044 (36, 1)
100.0 /	9.01398C(358, 6)	7.81659 (176, 7)	5.99543 (176, 7)	5.21892 (255, 7)	2.24083 (288, 6)
90.0 /	11.52363 (177, 7)	8.86246 (194, 7)	6.71864 (231, 3)	5.21892C(224, 2)	2.64222 (194, 7)
80.0 /	7.33662C(44, 7)	6.54163C(255, 3)	5.36819C(255, 3)	4.10669C(44, 7)	1.70879C(44, 7)
70.0 /	10.26057 (178, 1)	7.40267 (178, 1)	5.44092 (26, 6)	4.99011 (289, 7)	2.32219C(79, 7)
60.0 /	8.61612 (175, 2)	6.64092 (217, 7)	5.52359 (217, 7)	4.60557C(7, 1)	3.11226C(7, 1)
50.0 /	10.15170 (129, 8)	10.16677 (225, 8)	9.77860 (109, 8)	9.06379 (109, 8)	5.10537 (109, 8)
40.0 /	11.92246 (25, 2)	8.86572 (25, 2)	6.42368 (25, 2)	5.21891C(290, 1)	2.98204C(290, 1)
30.0 /	9.64589 (18, 8)	7.05068 (18, 8)	6.79172 (113, 8)	5.44713 (25, 4)	2.00972 (125, 8)
20.0 /	8.26562 (24, 6)	6.57978 (24, 6)	6.20253 (25, 1)	5.48586 (25, 1)	2.57047 (100, 7)
10.0 /	8.29362 (180, 7)	6.71181 (180, 7)	5.36818 (196, 7)	4.10668 (196, 7)	1.93821C(142, 8)
360.0 /	9.43189 (25, 3)	8.10895 (341, 2)	7.02190 (341, 2)	5.21908 (111, 7)	2.58220 (341, 2)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 22.27322 AND OCCURRED AT (313.0, 70.0) *

DIRECTION /			RANGE (METERS)		
(DEGREES) /	313.0	407.0	532.0	720.0	939.0
350.0 /	8.88873 (215, 2)	7.36689 (202, 2)	6.33835 (202, 2)	5.82134 (66, 1)	5.91399 (66, 1)
340.0 /	10.37910 (289, 2)	9.67411 (289, 2)	7.71211 (289, 2)	6.56738 (18, 2)	5.81933 (18, 2)
330.0 /	10.27356 (208, 2)	8.42126 (356, 2)	6.71566 (356, 2)	5.29615 (83, 1)	4.84941 (83, 1)
320.0 /	13.74528 (210, 2)	11.98870 (57, 2)	9.97341 (57, 2)	7.53053 (18, 1)	7.15043 (18, 1)
310.0 /	15.93022 (302, 2)	17.36094 (302, 2)	15.13369 (302, 2)	10.94833 (302, 2)	7.87244 (366, 3)
300.0 /	15.39616 (302, 2)	17.07569 (302, 2)	15.10679 (302, 2)	12.17749C(204, 1)	11.16258C(204, 1)

290.0 /	10.44855 (159, 2)	10.52351 (212, 2)	8.78863 (212, 2)	6.28262 (274, 2)	6.84533 (215, 1)
280.0 /	12.65354 (167, 2)	12.42889 (168, 2)	11.15748 (168, 2)	11.89827C(203, 1)	12.62946C(203, 1)
270.0 /	11.31992 (49, 2)	11.82403 (49, 2)	10.87982 (160, 2)	12.29305 (217, 1)	11.69576 (217, 1)
260.0 /	11.80215 (164, 2)	10.87931 (315, 2)	10.10644 (315, 2)	7.78629 (361, 3)	6.79196 (361, 3)
250.0 /	17.65334 (164, 2)	13.76926 (164, 2)	10.97306 (280, 2)	11.02143 (351, 2)	9.77861 (351, 2)
240.0 /	17.04526 (303, 2)	15.11942 (303, 2)	11.69065 (283, 2)	10.60065 (283, 2)	9.79165C(347, 1)
230.0 /	19.20330 (250, 2)	17.72573 (250, 2)	13.86013 (250, 2)	9.25170 (250, 2)	8.91976C(347, 1)
220.0 /	13.10242 (2, 2)	13.33387 (2, 2)	11.93962 (14, 1)	13.13459 (14, 1)	11.63859 (14, 1)
210.0 /	10.58632 (195, 2)	8.91171 (195, 2)	7.88720 (130, 2)	8.09516 (13, 3)	7.13097 (13, 3)
200.0 /	14.37521 (342, 2)	13.01567 (342, 2)	10.00319 (342, 2)	7.30128C(338, 2)	5.97378C(338, 2)
190.0 /	16.27274 (342, 2)	14.47555 (342, 2)	10.96693 (342, 2)	8.79634 (209, 3)	7.48134 (209, 3)
180.0 /	11.48147 (131, 2)	9.99091 (342, 2)	7.57401 (31, 2)	7.11260 (21, 1)	6.11861 (21, 1)
170.0 /	12.14683 (61, 2)	10.44007 (61, 2)	7.73520 (61, 2)	6.57394 (151, 1)	5.39742 (151, 1)
160.0 /	12.06180 (61, 2)	9.98807 (61, 2)	9.65469 (19, 2)	10.04783 (19, 2)	8.65696 (19, 2)
150.0 /	10.12952C(273, 2)	10.44700C(273, 2)	8.80485C(273, 2)	7.34282 (67, 2)	6.33447C(56, 3)
140.0 /	8.85432 (115, 2)	7.96248 (115, 2)	7.92128C(189, 3)	7.76609 (67, 1)	6.77204 (67, 1)
130.0 /	8.62274 (245, 2)	8.70427 (245, 2)	7.53456 (11, 2)	7.61715 (11, 2)	7.58105C(155, 3)
120.0 /	8.30274 (77, 2)	8.34019 (224, 2)	7.73794 (207, 3)	8.33208C(224, 3)	8.34216C(224, 3)
110.0 /	11.78839 (226, 2)	9.15693 (292, 2)	7.31872 (292, 2)	6.38343C(146, 3)	6.33888C(146, 3)
100.0 /	13.16647 (226, 2)	10.54965C(154, 2)	7.67535C(154, 2)	7.08674 (176, 3)	6.91147 (176, 3)
90.0 /	18.81396C(154, 2)	15.38441C(55, 2)	12.60611C(55, 2)	10.11149 (177, 3)	8.56218 (177, 3)
80.0 /	16.06007C(290, 2)	14.18218C(290, 2)	10.75463C(290, 2)	7.00970C(290, 2)	4.75529 (233, 2)
70.0 /	22.27322C(290, 2)	18.63750C(290, 2)	14.42471C(86, 2)	15.15424C(86, 2)	13.35637C(86, 2)
60.0 /	15.71748C(238, 2)	11.83281C(238, 2)	8.09154C(6, 2)	6.85945C(230, 2)	5.47372C(230, 2)
50.0 /	14.72247C(238, 2)	10.99113C(238, 2)	8.68805 (129, 3)	10.74145 (129, 3)	10.56537 (129, 3)
40.0 /	11.45253C(194, 2)	8.41218C(238, 2)	7.54997C(348, 3)	7.49346 (53, 2)	6.75698 (125, 3)
30.0 /	11.27948 (110, 2)	10.11297 (110, 2)	10.89755 (25, 2)	11.32405 (25, 2)	9.93690 (25, 2)
20.0 /	11.22244 (102, 2)	9.73725 (102, 2)	7.67395 (125, 1)	8.25117 (125, 1)	7.34763 (125, 1)
10.0 /	7.56104 (129, 2)	7.18328 (193, 2)	7.61103 (85, 2)	7.70017 (65, 3)	7.47050 (65, 3)
360.0 /	8.56423 (215, 2)	8.55673 (87, 3)	10.72871 (87, 3)	10.72820 (87, 3)	9.12276 (87, 3)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 22.27322 AND OCCURRED AT (313.0, 70.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	5.17028 (66, 1)	4.09195 (66, 1)	3.12873 (66, 1)	2.29715 (237, 1)	1.34704 (237, 1)
340.0 /	4.60115 (18, 2)	3.34128 (18, 2)	3.23566C(192, 3)	3.06281C(192, 3)	1.79604C(192, 3)
330.0 /	3.90871 (83, 1)	2.93889 (183, 1)	2.62583 (183, 1)	2.29765 (126, 1)	1.34712 (126, 1)
320.0 /	5.90073 (18, 1)	4.43434 (18, 1)	3.40871 (65, 1)	2.77458C(246, 3)	1.49101C(123, 1)
310.0 /	6.88606 (366, 3)	5.42851 (366, 3)	4.33824 (293, 1)	3.85346 (293, 1)	2.05500 (293, 1)
300.0 /	9.15761C(204, 1)	6.99061C(204, 1)	5.90052C(112, 1)	4.82390C(112, 1)	2.27005C(112, 1)
290.0 /	7.52929 (215, 1)	7.55972 (215, 1)	6.91279 (215, 1)	5.77129 (215, 1)	2.93392C(64, 1)
280.0 /	11.43136C(203, 1)	9.31408C(203, 1)	7.23796C(203, 1)	5.32205C(203, 1)	2.28170 (213, 1)
270.0 /	9.73958 (217, 1)	7.38983 (217, 1)	5.44755 (217, 1)	4.14395C(198, 1)	2.30304 (303, 3)
260.0 /	6.55055C(165, 1)	6.99415C(165, 1)	6.62549C(165, 1)	5.65640C(165, 1)	3.19592C(304, 1)
250.0 /	8.88408 (351, 3)	9.28066 (351, 3)	8.69605 (351, 3)	7.35860 (351, 3)	3.63391 (351, 3)
240.0 /	9.14026 (313, 3)	7.79058 (313, 3)	6.21572 (313, 3)	5.67581C(165, 1)	3.16643C(165, 1)
230.0 /	7.47951C(347, 1)	5.96586C(305, 1)	6.04124C(305, 1)	5.39240C(305, 1)	2.92372C(279, 1)
220.0 /	9.19248 (14, 1)	6.66532 (14, 1)	5.28806 (285, 3)	4.05805 (285, 3)	1.79604C(190, 1)

210.0 /	6.02369 (307, 3)	4.95079 (307, 3)	3.86706 (307, 3)	2.85254 (307, 3)	1.16113C(191, 1)
200.0 /	4.49295C(338, 2)	3.26440 (16, 2)	2.83333 (354, 3)	2.71479 (354, 3)	1.58649 (354, 3)
190.0 /	5.79466 (209, 3)	4.13158 (209, 3)	2.90620 (209, 3)	2.59606 (3, 3)	1.60572 (3, 3)
180.0 /	4.76672 (21, 1)	3.43264 (21, 1)	3.06741 (283, 1)	2.85827 (283, 1)	1.59524 (283, 1)
170.0 /	4.16317 (151, 1)	3.02124 (151, 1)	2.83906C(103, 3)	2.65400C(103, 3)	1.50409C(103, 3)
160.0 /	6.75450 (19, 2)	4.87138 (19, 2)	3.46937 (19, 2)	2.60945C(309, 3)	1.49101C(309, 3)
150.0 /	6.22047C(56, 3)	5.75473C(56, 3)	5.05249C(56, 3)	4.13130C(56, 3)	2.11908C(4, 3)
140.0 /	5.56474 (253, 1)	4.58471 (253, 1)	3.60586C(222, 3)	2.95620C(222, 3)	1.55488C(247, 3)
130.0 /	7.18438C(155, 3)	6.36627C(155, 3)	5.35048C(155, 3)	4.37504C(253, 3)	2.19323C(253, 3)
120.0 /	7.26667C(224, 3)	5.74211C(224, 3)	5.33980C(254, 1)	4.58077C(254, 1)	2.27831C(254, 1)
110.0 /	5.38206C(146, 3)	4.24119 (108, 3)	3.23832 (108, 3)	2.68723 (86, 1)	1.54402 (86, 1)
100.0 /	5.88871 (176, 3)	4.55623 (176, 3)	3.40431 (176, 3)	3.00955C(255, 3)	1.60168C(255, 3)
90.0 /	6.58088 (177, 3)	5.75479C(231, 1)	5.08585C(231, 1)	4.13903C(231, 1)	1.94823C(231, 1)
80.0 /	4.06887 (231, 3)	3.45386 (231, 3)	2.83497 (231, 3)	2.18886 (231, 3)	1.32629C(5, 3)
70.0 /	10.57791C(86, 2)	7.71485C(86, 2)	5.53949C(86, 2)	3.81115C(86, 2)	1.38183 (289, 3)
60.0 /	4.20663 (175, 1)	4.05997 (248, 3)	3.67986 (248, 3)	3.05652 (248, 3)	1.55613C(7, 1)
50.0 /	9.05259 (129, 3)	7.04586 (129, 3)	5.29559 (129, 3)	3.88546 (225, 3)	2.21785 (225, 3)
40.0 /	5.91982 (125, 3)	4.67717 (125, 3)	3.54291 (125, 3)	2.83584C(105, 1)	1.50409C(226, 1)
30.0 /	7.81480 (25, 2)	5.64199 (25, 2)	4.00637 (25, 2)	2.72037 (25, 2)	1.27928 (113, 3)
20.0 /	5.87195 (125, 1)	4.68571 (85, 3)	3.79001 (85, 3)	2.86843 (85, 3)	1.21098 (24, 3)
10.0 /	6.34560 (65, 3)	4.90017 (65, 3)	3.65867 (65, 3)	2.89782 (85, 3)	1.31839 (85, 3)
360.0 /	7.05439 (87, 3)	5.25882 (114, 1)	3.96199 (114, 1)	2.84626 (341, 1)	1.27803C(111, 3)

*** IWT Case 1--1984 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 16.48134 AND OCCURRED AT (313.0, 230.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	6.94928 (202, 2)	7.05327 (215, 2)	5.46050 (200, 1)	5.24804 (87, 1)	5.17627C(302, 1)
340.0 /	9.00222 (84, 2)	7.54580 (84, 2)	6.23435C(140, 3)	5.27734 (289, 2)	4.99826C(217, 3)
330.0 /	9.78733 (84, 2)	8.15595 (84, 2)	6.10088 (210, 2)	4.57337 (356, 2)	3.93717 (10, 2)
320.0 /	12.74341 (292, 2)	11.09784 (292, 2)	8.34046 (292, 2)	7.02430 (57, 2)	6.37524 (65, 1)
310.0 /	14.38853 (143, 2)	13.06933 (143, 2)	10.12488 (143, 2)	8.73254 (57, 3)	7.53120 (302, 2)
300.0 /	12.66420 (210, 2)	10.09982 (169, 2)	11.23217C(204, 1)	11.08243 (302, 2)	8.93379 (24, 1)
290.0 /	10.36555 (212, 2)	8.30865 (217, 2)	6.57545 (160, 2)	6.18315 (212, 2)	6.17943 (211, 1)
280.0 /	11.56915 (168, 2)	10.67388 (167, 2)	8.77400C(203, 1)	8.54174 (168, 2)	8.83190 (213, 1)
270.0 /	10.93735 (160, 2)	11.64488 (160, 2)	10.61919 (49, 2)	8.92187 (160, 2)	7.26707 (9, 3)
260.0 /	10.82100 (116, 2)	10.05383 (306, 2)	9.13706 (306, 2)	7.70167 (315, 2)	6.75868 (360, 3)
250.0 /	12.84950 (280, 2)	13.11463 (280, 2)	9.96061 (351, 2)	9.65951 (363, 1)	9.47043 (350, 1)
240.0 /	16.01490 (250, 2)	14.60307 (250, 2)	11.56589 (303, 2)	9.85566 (15, 1)	9.43491 (313, 3)
230.0 /	16.48134 (241, 2)	13.39050 (241, 2)	11.63307C(338, 2)	9.11049C(347, 1)	7.56356 (16, 2)
220.0 /	12.97540 (250, 2)	11.69056 (250, 2)	11.14251 (2, 2)	7.86774 (2, 2)	7.24506 (285, 3)
210.0 /	7.88141 (190, 2)	8.39392 (130, 2)	7.69568 (318, 2)	6.99958 (20, 2)	6.56390 (307, 3)
200.0 /	9.96047 (193, 2)	9.38091 (193, 2)	7.95238C(338, 2)	6.57611 (342, 2)	5.59137 (16, 2)
190.0 /	12.58575 (131, 2)	9.36598 (131, 2)	9.08803 (209, 3)	7.11177 (342, 2)	5.35181 (12, 2)
180.0 /	11.41180 (342, 2)	8.53106 (131, 2)	7.47070 (342, 2)	6.55189 (327, 3)	5.52046 (327, 3)
170.0 /	8.99294 (31, 2)	8.14280 (31, 2)	7.57560 (151, 1)	6.26014 (229, 2)	5.05862 (229, 2)
160.0 /	9.68547C(220, 2)	9.22285 (192, 2)	7.81910 (192, 2)	6.90911C(73, 3)	5.66669C(73, 3)
150.0 /	9.38091 (229, 2)	8.44350 (69, 2)	7.72185C(320, 3)	7.31744 (67, 1)	6.32693 (67, 1)
140.0 /	7.93549 (229, 2)	7.47797C(189, 3)	7.31334 (59, 3)	7.41144 (59, 3)	6.33520 (59, 3)

130.0 /	7.30461 (228, 2)	6.45618 (228, 2)	7.36317 (245, 2)	7.39925C(155, 3)	6.42042 (11, 2)
120.0 /	7.49786 (228, 2)	8.23466 (77, 2)	7.48876 (224, 2)	7.70879 (207, 3)	6.66868 (207, 3)
110.0 /	9.61478 (292, 2)	8.31621 (224, 2)	7.13361 (224, 2)	6.19503 (53, 3)	6.13668 (108, 3)
100.0 /	12.56233C(154, 2)	10.00896 (226, 2)	7.50439 (109, 2)	6.18488C(245, 3)	6.06787 (97, 3)
90.0 /	16.33871C(55, 2)	15.15363C(154, 2)	10.69294C(154, 2)	9.00377C(55, 2)	6.51196C(230, 3)
80.0 /	14.35905C(55, 2)	12.21149C(55, 2)	9.95924 (135, 2)	6.99452 (135, 2)	4.75064 (135, 2)
70.0 /	15.35090C(288, 2)	13.03999C(288, 2)	13.54210C(290, 2)	12.47118 (178, 1)	10.89039 (178, 1)
60.0 /	14.75310C(290, 2)	11.57379C(290, 2)	7.92214C(290, 2)	5.93191 (182, 2)	5.13832 (175, 1)
50.0 /	13.26761C(194, 2)	9.83349 (218, 2)	8.01198 (233, 1)	9.28930 (233, 1)	8.72635 (233, 1)
40.0 /	11.14089C(238, 2)	8.20641C(194, 2)	7.47831 (125, 2)	6.63474 (125, 3)	6.50188 (53, 2)
30.0 /	10.35085 (50, 2)	9.05187 (102, 2)	8.87913 (114, 2)	9.13848 (114, 2)	7.93802 (18, 3)
20.0 /	9.61798 (200, 2)	9.06063 (144, 2)	7.44710 (144, 2)	6.86420 (340, 3)	6.02964 (340, 3)
10.0 /	7.00783C(6, 2)	6.70565 (129, 2)	6.39981 (65, 3)	7.20347 (27, 1)	6.90551 (27, 1)
360.0 /	8.35085 (142, 2)	6.80166C(197, 3)	6.47141C(197, 3)	7.52934 (114, 1)	7.68111 (114, 1)

1

2ND HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 16.48134 AND OCCURRED AT (313.0, 230.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	4.41107C(302, 1)	3.39686C(302, 1)	2.52908C(302, 1)	2.29245 (66, 1)	1.09585C(99, 3)
340.0 /	4.13354C(217, 3)	3.27081C(230, 1)	2.68409C(230, 1)	2.05334C(230, 1)	.88962 (142, 1)
330.0 /	3.11588C(359, 3)	2.87869 (83, 1)	2.42762 (126, 1)	2.14801 (183, 1)	1.01198 (183, 1)
320.0 /	5.54274 (65, 1)	4.39868 (65, 1)	3.31661C(246, 3)	2.60946C(123, 1)	1.37447C(246, 3)
310.0 /	5.60216 (65, 1)	4.82689 (65, 1)	4.10361 (366, 3)	3.02106 (198, 3)	1.51884 (198, 3)
300.0 /	7.74422C(226, 1)	6.60994C(112, 1)	5.32238C(204, 1)	4.15870 (126, 3)	2.23965 (126, 3)
290.0 /	5.43169 (211, 1)	5.31500 (205, 1)	5.03011C(64, 1)	4.82772C(64, 1)	2.82785 (215, 1)
280.0 /	8.56319 (213, 1)	7.64691 (213, 1)	6.45218 (213, 1)	5.08634 (213, 1)	2.08528C(203, 1)
270.0 /	6.85984 (168, 1)	5.74692 (168, 1)	4.84379C(198, 1)	4.13863 (303, 3)	2.06267C(292, 1)
260.0 /	5.58604 (209, 1)	5.47396C(198, 1)	5.95039C(304, 1)	5.55625C(304, 1)	2.85707C(165, 1)
250.0 /	8.43792 (350, 1)	7.63267 (306, 3)	7.09804 (306, 3)	6.34259 (297, 1)	3.47677 (297, 1)
240.0 /	8.99059C(347, 1)	7.45395C(347, 1)	6.17141C(165, 1)	4.81699 (315, 1)	2.65361 (315, 1)
230.0 /	6.10495 (16, 2)	5.66474C(347, 1)	5.83097 (281, 1)	5.28987 (281, 1)	2.92313C(305, 1)
220.0 /	7.21213 (285, 3)	6.40359 (285, 3)	4.74986 (14, 1)	3.76653 (251, 1)	1.79604C(241, 1)
210.0 /	5.61149 (13, 3)	4.05708 (13, 3)	2.89604C(189, 3)	2.25220C(189, 3)	1.16110C(140, 3)
200.0 /	4.46069 (16, 2)	3.16346 (271, 1)	2.73617 (270, 1)	2.27616 (276, 1)	1.47082 (276, 1)
190.0 /	4.29376 (12, 2)	3.14779 (12, 2)	2.57767 (3, 3)	2.22556 (68, 1)	1.23993 (353, 3)
180.0 /	4.24392 (329, 1)	3.26167 (300, 1)	3.03473 (355, 3)	2.73327 (355, 3)	1.49755 (355, 3)
170.0 /	3.78908 (229, 2)	2.96604 (275, 1)	2.32068C(136, 1)	2.11784C(136, 1)	1.26941C(343, 3)
160.0 /	4.56293C(25, 3)	3.52015C(25, 3)	2.82730C(62, 3)	2.43489C(62, 3)	1.40402C(76, 3)
150.0 /	4.98899C(76, 3)	4.43235C(76, 3)	3.62295C(76, 3)	3.33381C(4, 3)	1.97777C(56, 3)
140.0 /	5.29550 (67, 1)	4.03642C(222, 3)	3.58347 (253, 1)	2.84506C(247, 3)	1.39862C(338, 3)
130.0 /	5.70930C(253, 3)	5.65996C(253, 3)	5.19569C(253, 3)	4.20014C(155, 3)	1.85658C(155, 3)
120.0 /	5.59063 (107, 1)	5.54385C(254, 1)	4.36058C(224, 3)	3.74794C(115, 3)	2.18002C(115, 3)
110.0 /	5.34654 (108, 3)	4.13773C(146, 3)	3.07976C(146, 3)	2.34685 (108, 3)	1.13162 (36, 1)
100.0 /	5.37319 (97, 3)	4.31044 (97, 3)	3.40324C(255, 3)	2.70623 (174, 1)	1.37044 (174, 1)
90.0 /	5.97803C(231, 1)	4.73802C(194, 3)	3.85018C(194, 3)	3.00701C(224, 1)	1.60322C(224, 1)
80.0 /	3.67505 (112, 3)	3.27082C(44, 3)	2.68409C(44, 3)	2.05334C(44, 3)	.94433 (231, 3)
70.0 /	8.52942 (178, 1)	6.14543 (178, 1)	4.35966 (178, 1)	2.95998 (178, 1)	1.31210C(86, 2)
60.0 /	4.10743 (248, 3)	3.32050C(217, 3)	2.76181C(217, 3)	2.30278C(7, 1)	1.48783 (248, 3)

50.0 /	7.25260 (233, 1)	5.51098 (233, 1)	4.38842 (56, 1)	3.78593 (129, 3)	1.92433 (109, 3)
40.0 /	5.05942 (53, 2)	3.61866 (53, 2)	3.18965C(105, 1)	2.65400C(226, 1)	1.49102C(290, 1)
30.0 /	6.25723 (18, 3)	4.53200 (18, 3)	3.22855 (18, 3)	2.53050 (113, 3)	.89816 (25, 2)
20.0 /	5.48482 (85, 3)	4.31330 (125, 1)	3.35295 (100, 3)	2.65097 (100, 3)	1.16630 (100, 3)
10.0 /	5.84043 (27, 1)	4.51139 (27, 1)	3.59885 (85, 3)	2.59958 (65, 3)	.94840 (65, 3)
360.0 /	6.69828 (114, 1)	5.04377 (87, 3)	3.69663 (341, 1)	2.83069 (114, 1)	1.22628 (341, 1)

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HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7.90027 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	3.09173C(215, 1)	2.60397C(167, 1)	2.50442 (87, 1)	2.75257 (66, 1)	2.66119 (66, 1)
340.0 /	4.37015C(289, 1)	4.07331C(289, 1)	3.24720C(289, 1)	2.91007 (58, 1)	2.51107 (58, 1)
330.0 /	4.66144C(84, 1)	4.10745C(84, 1)	3.11743C(84, 1)	2.31325C(166, 1)	1.73947C(166, 1)
320.0 /	5.66709C(292, 1)	5.07024 (57, 1)	4.71143 (57, 1)	4.12667 (65, 1)	3.66882 (65, 1)
310.0 /	6.69805 (210, 1)	6.14055C(302, 1)	6.25091 (57, 1)	5.34479 (57, 1)	4.14801 (57, 1)
300.0 /	5.89868 (210, 1)	6.60126C(302, 1)	6.48777C(302, 1)	7.36615C(44, 1)	6.69408C(44, 1)
290.0 /	3.94878C(212, 1)	4.00896C(212, 1)	3.55662C(169, 1)	3.18466C(169, 1)	3.11747C(215, 1)
280.0 /	5.01509 (161, 1)	5.49520 (161, 1)	5.29364 (161, 1)	5.61416 (43, 1)	5.10847 (43, 1)
270.0 /	5.41222 (159, 1)	5.55431 (159, 1)	5.47348 (168, 1)	5.85366 (168, 1)	5.48374 (168, 1)
260.0 /	4.81013C(116, 1)	4.15866C(315, 1)	4.91995C(360, 1)	5.22801C(360, 1)	4.83605C(360, 1)
250.0 /	7.21756 (164, 1)	6.16768 (164, 1)	5.89359 (350, 1)	7.59770 (350, 1)	7.75098 (350, 1)
240.0 /	6.33669C(250, 1)	6.86202C(250, 1)	6.72352 (15, 1)	7.38936 (15, 1)	6.54735 (15, 1)
230.0 /	7.51657C(241, 1)	6.39296C(250, 1)	5.64536 (14, 1)	5.97455 (14, 1)	5.18415 (12, 1)
220.0 /	5.93562C(241, 1)	4.78093C(241, 1)	6.60523 (14, 1)	7.12767 (14, 1)	6.23541 (14, 1)
210.0 /	3.68533C(195, 1)	3.73603 (130, 1)	5.09197 (20, 1)	5.36079 (20, 1)	4.63440 (20, 1)
200.0 /	5.31489C(342, 1)	4.98620C(342, 1)	4.10858C(342, 1)	3.60919 (12, 1)	3.20646 (12, 1)
190.0 /	5.91897C(342, 1)	5.27743C(342, 1)	4.06588C(342, 1)	3.75665 (328, 1)	3.14044 (12, 1)
180.0 /	4.31754C(342, 1)	3.97631C(342, 1)	4.52915 (328, 1)	4.52128 (328, 1)	3.79224 (328, 1)
170.0 /	4.62743C(61, 1)	4.85958C(229, 1)	4.99856C(229, 1)	4.57563C(229, 1)	3.79562C(229, 1)
160.0 /	5.44829C(229, 1)	4.77291C(229, 1)	4.38136 (19, 1)	4.58584 (19, 1)	3.96168 (19, 1)
150.0 /	4.65927C(115, 1)	4.85048 (67, 1)	6.36076 (67, 1)	6.43175 (67, 1)	5.45715 (67, 1)
140.0 /	3.97249C(221, 1)	4.50919 (67, 1)	5.48053 (67, 1)	5.39362 (67, 1)	4.58982 (67, 1)
130.0 /	4.07311C(221, 1)	4.16644C(221, 1)	4.24472 (59, 1)	4.13412 (59, 1)	3.45593C(253, 1)
120.0 /	4.00570C(224, 1)	5.15360C(224, 1)	5.56787C(224, 1)	5.25173C(224, 1)	4.51673C(224, 1)
110.0 /	4.94722C(226, 1)	5.43308C(224, 1)	5.14991C(224, 1)	4.46295C(224, 1)	3.75283C(224, 1)
100.0 /	5.46704C(226, 1)	4.90201C(225, 1)	4.26769C(225, 1)	4.51117 (272, 1)	4.12789 (272, 1)
90.0 /	7.90027C(55, 1)	7.79832C(55, 1)	6.81166C(55, 1)	5.42380C(55, 1)	4.40381 (177, 1)
80.0 /	7.22921C(225, 1)	6.36822C(225, 1)	4.84701C(225, 1)	3.44583C(55, 1)	2.79441 (177, 1)
70.0 /	7.42441C(290, 1)	6.21250C(290, 1)	4.94990C(86, 1)	5.19487C(86, 1)	4.56950C(86, 1)
60.0 /	5.79065C(238, 1)	4.55117C(218, 1)	3.89944 (181, 1)	3.42212 (181, 1)	2.79653 (181, 1)
50.0 /	5.42407C(238, 1)	4.37044C(218, 1)	4.37558C(233, 1)	4.73067C(233, 1)	4.40426C(233, 1)
40.0 /	4.10454C(238, 1)	3.95209 (125, 1)	4.62551 (125, 1)	4.65601 (125, 1)	4.12681 (125, 1)
30.0 /	4.56665C(102, 1)	4.50786 (124, 1)	4.70033 (124, 1)	4.79626C(25, 1)	4.30652C(25, 1)
20.0 /	4.74330C(102, 1)	4.26452C(102, 1)	4.09636 (88, 1)	4.09803 (88, 1)	3.44010 (88, 1)
10.0 /	2.92500C(85, 1)	3.76375C(85, 1)	4.16307C(85, 1)	4.09149C(85, 1)	3.73039C(85, 1)
360.0 /	3.05083C(121, 1)	3.74800 (87, 1)	4.67954 (87, 1)	4.66154 (87, 1)	3.95260 (87, 1)

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HIGH
24-HR

SGROUP# 1

*** IWT Case 1--1984 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7.90027 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	2.25316 (66, 1)	1.73897 (66, 1)	1.30520 (66, 1)	.93994 (66, 1)	.48983C(237, 1)
340.0 /	1.95075 (58, 1)	1.39546 (58, 1)	.98428 (58, 1)	.91884C(192, 1)	.53881C(192, 1)
330.0 /	1.35975C(83, 1)	1.00138C(83, 1)	.88390 (183, 1)	.76588 (126, 1)	.44904 (126, 1)
320.0 /	2.96053 (65, 1)	2.21725 (65, 1)	1.64572 (65, 1)	1.35581C(110, 1)	.66505C(110, 1)
310.0 /	3.16561C(366, 1)	2.35474C(366, 1)	1.71481C(366, 1)	1.38342 (293, 1)	.71139 (293, 1)
300.0 /	5.39144C(44, 1)	3.99811C(44, 1)	2.98747C(204, 1)	2.16334C(204, 1)	.88221C(204, 1)
290.0 /	3.19361C(215, 1)	3.03989C(215, 1)	2.69227C(215, 1)	2.19989C(215, 1)	1.04406C(215, 1)
280.0 /	4.13041 (43, 1)	3.24549C(336, 1)	2.82329C(215, 1)	2.37304C(215, 1)	1.18026C(215, 1)
270.0 /	4.59505 (168, 1)	3.51984 (168, 1)	2.72558 (303, 1)	2.35997 (303, 1)	1.19859 (303, 1)
260.0 /	4.10460C(360, 1)	3.34375C(304, 1)	3.11555C(304, 1)	2.64342C(304, 1)	1.33161C(304, 1)
250.0 /	6.84774 (350, 1)	5.98713C(351, 1)	5.10970C(351, 1)	4.05254C(351, 1)	1.80689C(351, 1)
240.0 /	5.16553 (15, 1)	3.73843 (15, 1)	3.09206 (268, 1)	2.43004 (268, 1)	1.18822C(165, 1)
230.0 /	4.12727 (12, 1)	3.01131 (12, 1)	2.83013C(305, 1)	2.45234C(305, 1)	1.26976C(305, 1)
220.0 /	4.87717 (14, 1)	3.50362 (14, 1)	2.47690 (14, 1)	1.87199 (285, 1)	.77652 (285, 1)
210.0 /	3.60829 (20, 1)	2.58861 (20, 1)	1.83152 (20, 1)	1.24152 (20, 1)	.54613 (286, 1)
200.0 /	2.53420 (12, 1)	1.83701 (12, 1)	1.35898C(238, 1)	1.14307C(354, 1)	.66800C(354, 1)
190.0 /	2.49679 (12, 1)	1.81518 (12, 1)	1.64336C(3, 1)	1.57395C(3, 1)	.93391C(3, 1)
180.0 /	2.90166 (328, 1)	2.05551 (328, 1)	1.56956 (311, 1)	1.26992 (317, 1)	.60166C(344, 1)
170.0 /	2.89066C(229, 1)	2.03678C(229, 1)	1.46988 (151, 1)	1.15401C(333, 1)	.63636C(333, 1)
160.0 /	3.09391 (19, 1)	2.23163 (19, 1)	1.58878 (19, 1)	1.08494 (19, 1)	.49700C(309, 1)
150.0 /	4.20328 (67, 1)	2.99127 (67, 1)	2.10519 (67, 1)	1.42375 (60, 1)	.70712C(4, 1)
140.0 /	3.56838 (67, 1)	2.65009C(28, 1)	2.23208C(28, 1)	1.78154C(28, 1)	.83457C(28, 1)
130.0 /	3.31193C(253, 1)	3.02834C(253, 1)	2.63364C(253, 1)	2.13152C(253, 1)	1.00493C(253, 1)
120.0 /	3.58225C(224, 1)	2.75427C(254, 1)	2.40561C(254, 1)	1.94207C(254, 1)	.89083C(254, 1)
110.0 /	2.97216C(224, 1)	2.24199 (101, 1)	1.67514 (101, 1)	1.18923 (101, 1)	.58820C(86, 1)
100.0 /	3.37931 (272, 1)	2.53924 (272, 1)	1.86181 (272, 1)	1.32471C(174, 1)	.61243C(174, 1)
90.0 /	3.33751 (177, 1)	2.40503C(30, 1)	1.90391C(231, 1)	1.46743C(231, 1)	.63992C(231, 1)
80.0 /	2.28660C(255, 1)	1.83799C(255, 1)	1.41795C(255, 1)	1.03697C(255, 1)	.51883C(5, 1)
70.0 /	3.61106C(86, 1)	2.62732C(86, 1)	1.88230C(86, 1)	1.29209C(86, 1)	.58784C(289, 1)
60.0 /	2.13565 (181, 1)	1.86861C(248, 1)	1.62223C(248, 1)	1.31226C(248, 1)	.61714C(248, 1)
50.0 /	3.67268C(233, 1)	2.97909 (181, 1)	2.54568 (181, 1)	2.03786 (181, 1)	.99872C(225, 1)
40.0 /	3.32133 (125, 1)	2.46213 (125, 1)	1.78829 (125, 1)	1.24314 (125, 1)	.50574C(290, 1)
30.0 /	3.43329C(25, 1)	2.49940C(25, 1)	1.77994C(25, 1)	1.20760C(25, 1)	.50333 (113, 1)
20.0 /	2.63244 (88, 1)	2.15563C(25, 1)	1.78995C(25, 1)	1.38633C(25, 1)	.59246C(25, 1)
10.0 /	3.21976C(85, 1)	2.63990C(85, 1)	2.10589C(85, 1)	1.58845C(85, 1)	.65451C(85, 1)
360.0 /	3.04888 (87, 1)	2.17498 (87, 1)	1.53541 (87, 1)	1.04054 (87, 1)	.40876 (341, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7.43838 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	3.05661C(167, 1)	2.56240C(202, 1)	2.28844 (66, 1)	2.53653 (87, 1)	2.27427 (87, 1)
340.0 /	3.95585C(84, 1)	3.43852C(84, 1)	2.77785 (58, 1)	2.32743C(166, 1)	1.93978 (18, 1)
330.0 /	3.76955C(208, 1)	3.20810C(356, 1)	2.87262C(166, 1)	2.04239C(84, 1)	1.68711C(83, 1)
320.0 /	5.03963 (210, 1)	4.95052C(292, 1)	4.06318 (65, 1)	3.70342 (57, 1)	2.75805 (100, 1)
310.0 /	5.64061C(215, 1)	6.13038 (57, 1)	5.41986C(302, 1)	4.44317C(366, 1)	3.92316C(366, 1)
300.0 /	5.58613C(302, 1)	6.12222C(143, 1)	6.44648C(44, 1)	6.77326C(204, 1)	6.34769C(204, 1)
290.0 /	3.53376 (159, 1)	3.44655 (160, 1)	3.34805C(212, 1)	3.05291C(197, 1)	2.80197C(197, 1)
280.0 /	4.51959C(147, 1)	4.92577C(197, 1)	5.02062 (42, 1)	4.70642 (42, 1)	4.54557C(336, 1)
270.0 /	4.35721 (160, 1)	5.15597 (160, 1)	5.36576 (160, 1)	4.86419 (160, 1)	4.32538C(217, 1)
260.0 /	4.19575C(133, 1)	3.90434C(360, 1)	3.92685C(315, 1)	3.71291 (361, 1)	3.48498 (168, 1)
250.0 /	5.65135C(153, 1)	5.28694C(153, 1)	5.36402 (280, 1)	6.44071C(351, 1)	6.86554C(351, 1)
240.0 /	6.30989 (164, 1)	5.80015 (74, 1)	6.68338C(250, 1)	6.03613 (262, 1)	5.51999 (262, 1)
230.0 /	6.76116C(250, 1)	6.16521C(241, 1)	5.29897C(250, 1)	5.77557 (12, 1)	5.13965 (14, 1)
220.0 /	4.70823C(250, 1)	4.51965 (2, 1)	4.92581 (284, 1)	5.13579 (20, 1)	4.56041 (20, 1)
210.0 /	3.59317C(235, 1)	3.63283 (284, 1)	4.41249 (13, 1)	4.78755 (13, 1)	4.20059 (13, 1)
200.0 /	4.24640C(235, 1)	3.82757C(235, 1)	3.36713 (21, 1)	3.42837 (21, 1)	2.92272 (326, 1)
190.0 /	4.37780C(131, 1)	3.25785C(131, 1)	3.84482 (328, 1)	3.48984 (12, 1)	3.09888 (328, 1)
180.0 /	3.99355C(131, 1)	3.77601 (152, 1)	3.70191 (152, 1)	3.20118 (152, 1)	2.69715 (21, 1)
170.0 /	4.36746C(229, 1)	3.97814C(61, 1)	3.91197 (151, 1)	3.64054 (151, 1)	3.19636 (151, 1)
160.0 /	4.59631C(61, 1)	3.81413C(61, 1)	3.64681C(229, 1)	2.91151C(51, 1)	2.89918C(51, 1)
150.0 /	4.48216C(229, 1)	4.80421C(115, 1)	4.39430C(115, 1)	4.61780 (60, 1)	4.18912 (60, 1)
140.0 /	3.80941C(229, 1)	3.89047C(201, 1)	3.86201 (59, 1)	3.86409 (11, 1)	3.46478C(28, 1)
130.0 /	3.83240C(245, 1)	3.86862C(245, 1)	3.78997 (11, 1)	3.82524 (11, 1)	3.43073 (59, 1)
120.0 /	3.69011C(77, 1)	4.24594 (96, 1)	4.89242 (96, 1)	4.55729 (96, 1)	3.70468 (96, 1)
110.0 /	4.93667C(224, 1)	4.07000C(292, 1)	3.25335C(292, 1)	3.76452 (101, 1)	3.52238 (101, 1)
100.0 /	4.91236C(245, 1)	4.68786C(245, 1)	4.09130 (272, 1)	4.08472C(97, 1)	3.68633C(97, 1)
90.0 /	7.43838C(225, 1)	7.32337C(225, 1)	6.05281C(225, 1)	5.32381 (177, 1)	4.27804C(55, 1)
80.0 /	6.19139C(257, 1)	5.53885C(55, 1)	4.58129C(55, 1)	3.41300C(231, 1)	2.76721C(231, 1)
70.0 /	6.80421C(309, 1)	5.46033C(309, 1)	4.55548 (175, 1)	4.57846 (175, 1)	3.88896 (175, 1)
60.0 /	5.51433C(218, 1)	4.35945C(238, 1)	3.27778C(218, 1)	2.66777C(230, 1)	2.19943 (175, 1)
50.0 /	4.75149C(218, 1)	4.32300C(289, 1)	3.95195C(289, 1)	3.97275 (129, 1)	3.75593 (129, 1)
40.0 /	3.81751C(194, 1)	3.19603C(123, 1)	3.21995C(25, 1)	3.43241 (18, 1)	2.98581 (18, 1)
30.0 /	4.54820C(110, 1)	4.27153C(102, 1)	4.44737C(25, 1)	4.60828 (18, 1)	4.03904 (18, 1)
20.0 /	3.67738C(200, 1)	3.43544C(200, 1)	4.00502 (66, 1)	3.88818 (66, 1)	3.22965 (66, 1)
10.0 /	2.78792C(121, 1)	3.06863 (340, 1)	3.69508 (340, 1)	3.58296 (340, 1)	3.35325 (65, 1)
360.0 /	2.97886C(215, 1)	2.73506C(197, 1)	3.17223C(197, 1)	3.09312C(197, 1)	2.64214C(197, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1984 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7.43838 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	1.84268 (87, 1)	1.37127 (87, 1)	1.02141 (126, 1)	.84018 (126, 1)	.38575 (126, 1)
340.0 /	1.53372 (18, 1)	1.17338C(228, 1)	.97070C(192, 1)	.68445C(230, 1)	.31091C(142, 1)

330.0 /	1.25904 (58, 1)	.99427 (183, 1)	.80921 (126, 1)	.72080 (183, 1)	.33830 (183, 1)
320.0 /	2.19000 (100, 1)	1.75432C(110, 1)	1.61551C(110, 1)	1.18582 (65, 1)	.48230 (65, 1)
310.0 /	3.00917 (57, 1)	2.03270 (57, 1)	1.60498 (293, 1)	1.19363C(366, 1)	.55520C(198, 1)
300.0 /	5.24568C(204, 1)	3.98830C(204, 1)	2.92253C(44, 1)	2.05758C(44, 1)	.77132C(44, 1)
290.0 /	2.69744 (205, 1)	2.52153 (205, 1)	2.19884 (205, 1)	1.77370 (205, 1)	.95624C(64, 1)
280.0 /	4.02989C(336, 1)	3.06559C(215, 1)	2.50193C(336, 1)	1.81971C(336, 1)	.76057 (213, 1)
270.0 /	3.58299C(217, 1)	2.80799 (303, 1)	2.61427 (168, 1)	1.84781 (168, 1)	.76749C(198, 1)
260.0 /	3.29641C(304, 1)	3.27741C(360, 1)	2.56211C(360, 1)	2.02521C(165, 1)	.98477C(165, 1)
250.0 /	6.63035C(351, 1)	5.48368 (350, 1)	4.20669 (350, 1)	3.04901 (350, 1)	1.28272 (297, 1)
240.0 /	4.52266 (262, 1)	3.64139 (268, 1)	2.67079C(8, 1)	2.29593C(165, 1)	1.05192 (268, 1)
230.0 /	3.95460 (14, 1)	2.92558C(305, 1)	2.59442 (281, 1)	2.33291 (281, 1)	1.25730 (281, 1)
220.0 /	3.64795 (20, 1)	2.94433 (285, 1)	2.43252 (285, 1)	1.67479 (14, 1)	.71026C(283, 1)
210.0 /	3.29144 (13, 1)	2.36826 (13, 1)	1.67680 (13, 1)	1.22356 (286, 1)	.49515 (32, 1)
200.0 /	2.34630 (326, 1)	1.75116C(238, 1)	1.30828 (12, 1)	.98635C(238, 1)	.49027 (276, 1)
190.0 /	2.33620 (328, 1)	1.69727C(325, 1)	1.47367C(325, 1)	1.18711C(325, 1)	.54369C(325, 1)
180.0 /	2.19219 (311, 1)	1.92792 (311, 1)	1.53044 (317, 1)	1.18930 (311, 1)	.59902C(355, 1)
170.0 /	2.59664 (151, 1)	1.96304 (151, 1)	1.42312C(229, 1)	1.07158 (151, 1)	.45388 (151, 1)
160.0 /	2.48770C(51, 1)	1.93147C(51, 1)	1.46980C(249, 1)	1.05992C(249, 1)	.46621C(290, 1)
150.0 /	3.46996 (60, 1)	2.66487 (60, 1)	1.99633 (60, 1)	1.42117 (67, 1)	.62608C(56, 1)
140.0 /	3.08439C(28, 1)	2.56780 (67, 1)	1.82361 (67, 1)	1.23948 (67, 1)	.55064C(222, 1)
130.0 /	3.06000 (101, 1)	2.61486 (101, 1)	2.15433 (101, 1)	1.73033C(98, 1)	.95930C(98, 1)
120.0 /	3.26783 (107, 1)	2.73816 (107, 1)	2.20262 (107, 1)	1.67163 (107, 1)	.71799C(54, 1)
110.0 /	2.92684 (101, 1)	2.19711C(224, 1)	1.60077C(224, 1)	1.11690C(224, 1)	.42739 (101, 1)
100.0 /	3.03134C(97, 1)	2.30014C(97, 1)	1.70225C(97, 1)	1.30293 (272, 1)	.55458C(255, 1)
90.0 /	3.24203C(55, 1)	2.34039 (177, 1)	1.87023C(30, 1)	1.38169C(30, 1)	.55247C(224, 1)
80.0 /	2.21501C(231, 1)	1.72592C(231, 1)	1.34047C(231, 1)	.99536C(231, 1)	.40501C(231, 1)
70.0 /	3.00943 (175, 1)	2.16324 (175, 1)	1.54462 (175, 1)	1.18534C(289, 1)	.44237C(86, 1)
60.0 /	2.05089C(248, 1)	1.51990 (181, 1)	1.20385 (232, 1)	.95897 (232, 1)	.51871C(7, 1)
50.0 /	3.32408 (181, 1)	2.80850C(233, 1)	2.08892C(233, 1)	1.75893C(225, 1)	.95846 (181, 1)
40.0 /	2.33025 (18, 1)	1.67344 (18, 1)	1.20654 (232, 1)	.95178 (232, 1)	.46313C(337, 1)
30.0 /	3.17107 (18, 1)	2.29001 (18, 1)	1.62810 (18, 1)	1.10812 (18, 1)	.39237C(25, 1)
20.0 /	2.46564C(25, 1)	1.99331C(85, 1)	1.55988C(85, 1)	1.15280C(85, 1)	.46974 (24, 1)
10.0 /	2.78497 (65, 1)	2.11536 (65, 1)	1.56280 (65, 1)	1.10145 (65, 1)	.39692 (65, 1)
360.0 /	2.23276 (114, 1)	1.75294 (114, 1)	1.37903C(110, 1)	1.02447C(110, 1)	.40219C(110, 1)

RUN ENDED ON 08-23-90 AT 19:49:00

```
1                    ISCST - VERSION 3.4 (DATED 88348)

                     IBM-PC VERSION (1.64)
                     (C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
                     SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
                     RUN BEGAN ON 10-19-90 AT 12:41:19

1

                           *** IWTS Case 2 (1,000 acfm) -- 1984                                   ***

                 CALCULATE (CONCENTRATION=1,DEPOSITION=2)                                 ISW(1) =   1
                 RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)                  ISW(2) =   4
                 DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)                         ISW(3) =   1
                 TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                                 ISW(4) =   0
                 CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                            ISW(5) =   0
                 LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)                         ISW(6) =   1

                 COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
                 WITH THE FOLLOWING TIME PERIODS:
                   HOURLY (YES=1,NO=0)                                                    ISW(7) =   1
                   2-HOUR (YES=1,NO=0)                                                    ISW(8) =   0
                   3-HOUR (YES=1,NO=0)                                                    ISW(9) =   1
                   4-HOUR (YES=1,NO=0)                                                   ISW(10) =   0
                   6-HOUR (YES=1,NO=0)                                                   ISW(11) =   0
                   8-HOUR (YES=1,NO=0)                                                   ISW(12) =   1
                   12-HOUR (YES=1,NO=0)                                                  ISW(13) =   0
                   24-HOUR (YES=1,NO=0)                                                  ISW(14) =   1
                 PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                                     ISW(15) =   1

                 PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
                 SPECIFIED BY ISW(7) THROUGH ISW(14):
                   DAILY TABLES (YES=1,NO=0)                                             ISW(16) =   0
                   HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)                          ISW(17) =   1
                   MAXIMUM 50 TABLES (YES=1,NO=0)                                        ISW(18) =   0
                 METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)               ISW(19) =   1
                 RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)       ISW(20) =   0
                 WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)               ISW(21) =   1
                 VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)        ISW(22) =   1
                 SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)                       ISW(23) =   0
                 PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)                   ISW(24) =   1
                 PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)             ISW(25) =   2
                 PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)                   ISW(26) =   1
                 CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)                 ISW(27) =   1
                 REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                                 ISW(28) =   1
                 TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)                        ISW(29) =   2
                 DEBUG OPTION CHOSEN (YES=1,NO=2)                                        ISW(30) =   2
                 ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)                     ISW(31) =   0

                 NUMBER OF INPUT SOURCES                                                  NSOURC =   1
                 NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                                 NGROUP =   0
                 TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)                     IPERD =   0
                 NUMBER OF X (RANGE) GRID VALUES                                          NXPNTS =  10
                 NUMBER OF Y (THETA) GRID VALUES                                          NYPNTS =  36
                 NUMBER OF DISCRETE RECEPTORS                                             NXWYPT =   0
                 SOURCE EMISSION RATE UNITS CONVERSION FACTOR                                 TK =.10000E+07
                 HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED                         ZR =  10.00  METERS
                 LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA                                 IMET =   9
                 DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION                      DECAY = .000000E+00
                 SURFACE STATION NO.                                                         ISS = 12842
```

```
YEAR OF SURFACE DATA                                    ISY = 84
UPPER AIR STATION NO.                                   IUS = 12842
YEAR OF UPPER AIR DATA                                  IUY = 84
ALLOCATED DATA STORAGE                                LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN            MIMIT =  8613 WORDS
```

1 *** IWTS Case 2 (1,000 acfm) -- 1984 ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

1 *** IWTS Case 2 (1,000 acfm) -- 1984 ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

```
      185.0,     241.0,     315.0,     426.0,     555.0,     722.0,     962.0,    1258.0,    1665.0,    6000.0,
```

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

```
      360.0,      10.0,      20.0,      30.0,      40.0,      50.0,      60.0,      70.0,      80.0,      90.0,
      100.0,     110.0,     120.0,     130.0,     140.0,     150.0,     160.0,     170.0,     180.0,     190.0,
      200.0,     210.0,     220.0,     230.0,     240.0,     250.0,     260.0,     270.0,     280.0,     290.0,
      300.0,     310.0,     320.0,     330.0,     340.0,     350.0,
```

1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

*** SOURCE DATA ***

```
                   EMISSION RATE                                                TEMP.    EXIT VEL.
                      TYPE=0,1                                                  TYPE=0    TYPE=0
          T W      (GRAMS/SEC)                                                 (DEG.K);  (M/SEC);             BLDG.    BLDG.    BLDG.
          Y A NUMBER  TYPE=2                                BASE               VERT.DIM  HORZ.DIM DIAMETER  HEIGHT   LENGTH    WIDTH
  SOURCE  P K  PART.  (GRAMS/SEC)      X         Y         ELEV.     HEIGHT     TYPE=1   TYPE=1,2  TYPE=0    TYPE=0   TYPE=0   TYPE=0
  NUMBER  E E  CATS. *PER METER**2 (METERS)  (METERS)  (METERS)  (METERS)  (METERS)   (METERS) (METERS)  (METERS) (METERS) (METERS)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

       1  0 0    0    .10000E+01       .0        .0        .0     30.48    293.15      1.62      .61      .00      .00      .00
 * CALM HOURS (=1) FOR DAY   3 *  1  1  1  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY   4 *  1  0  1  1  1  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  1  0  1  1
 * CALM HOURS (=1) FOR DAY   5 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
 * CALM HOURS (=1) FOR DAY   6 *  1  1  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  1  0  0
 * CALM HOURS (=1) FOR DAY   7 *  0  1  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY   8 *  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  25 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
 * CALM HOURS (=1) FOR DAY  26 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0
 * CALM HOURS (=1) FOR DAY  28 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1
 * CALM HOURS (=1) FOR DAY  29 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
 * CALM HOURS (=1) FOR DAY  30 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  33 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  34 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  37 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
 * CALM HOURS (=1) FOR DAY  38 *  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  44 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1  0  0  1  1
 * CALM HOURS (=1) FOR DAY  45 *  1  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
 * CALM HOURS (=1) FOR DAY  47 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  1
 * CALM HOURS (=1) FOR DAY  48 *  0  0  1  0  1  1  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1
 * CALM HOURS (=1) FOR DAY  49 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  50 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
 * CALM HOURS (=1) FOR DAY  51 *  1  0  1  1  0  0  0  1  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  52 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0
 * CALM HOURS (=1) FOR DAY  54 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
 * CALM HOURS (=1) FOR DAY  55 *  1  0  1  1  1  0  0  1  1  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  56 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
 * CALM HOURS (=1) FOR DAY  61 *  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
 * CALM HOURS (=1) FOR DAY  62 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1
 * CALM HOURS (=1) FOR DAY  63 *  1  0  1  1  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  64 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  69 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  73 *  0  0  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1
 * CALM HOURS (=1) FOR DAY  76 *  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
```

* CALM HOURS (=1) FOR DAY 77 *	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 78 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 79 *	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 82 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 83 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 84 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 85 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 86 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 91 *	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 92 *	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 93 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 97 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 98 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 99 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 102 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 103 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 104 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 106 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 110 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 111 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 112 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 115 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 119 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 121 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 122 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 123 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 128 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 133 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 134 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 136 *	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 142 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 143 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 146 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 147 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 148 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 153 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 154 *	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 156 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 165 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 167 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 171 *	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 172 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 173 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 179 *	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 182 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 186 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 187 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 189 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 190 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 192 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 194 *	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 195 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 196 *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 197 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 198 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 200 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 201 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 202 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 204 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 212 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 218 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 219 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 220 *	0	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 222 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 223 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 224 *	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 225 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 230 *	0	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 231 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	1	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 239 *	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 244 *	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 247 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 248 *	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 250 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 253 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 255 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 256 *	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 257 *	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 258 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

* CALM HOURS (=1) FOR DAY 273 *	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 277 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 278 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 279 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 289 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 290 *	0	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 291 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 292 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 295 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 296 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 298 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 301 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 302 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 304 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 305 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 308 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
* CALM HOURS (=1) FOR DAY 310 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 315 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 321 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 325 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 331 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 334 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 336 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 337 *	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 338 *	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 339 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 342 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 343 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 344 *	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 345 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 346 *	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 347 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
* CALM HOURS (=1) FOR DAY 348 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 349 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 356 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 357 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 358 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 360 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 365 *	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 366 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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* 366-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.34651 AND OCCURRED AT (426.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0	722.0	962.0	1258.0	1665.0
350.0 /	.29803	.35740	.36586	.33342	.28582	.23390	.17961	.13538	.09867
340.0 /	.35607	.41699	.41348	.36166	.29921	.23740	.17723	.13054	.09307
330.0 /	.46387	.54824	.54784	.47988	.39442	.30983	.22928	.16866	.12073
320.0 /	.59012	.72564	.75225	.68400	.58072	.47062	.35888	.26968	.19621
310.0 /	.66872	.85098	.91299	.85994	.75142	.62558	.48970	.37539	.27777
300.0 /	.63243	.82676	.94126	.96422	.90740	.81048	.68068	.55272	.43072
290.0 /	.53840	.67914	.74630	.74688	.70415	.64468	.56400	.47557	.38336
280.0 /	.59628	.78332	.91078	.96309	.92899	.83937	.70308	.56434	.43332
270.0 /	.67505	.91945	1.09012	1.15595	1.11009	1.00041	.84025	.67901	.52586
260.0 /	.65965	.89949	1.06654	1.12594	1.07639	.97074	.82157	.67068	.52494
250.0 /	.67671	.92751	1.12941	1.24376	1.23683	1.15771	1.01569	.85263	.68407
240.0 /	.75192	1.03984	1.24996	1.34651	1.31979	1.22271	1.06030	.87724	.69229
230.0 /	.66621	.88012	1.00661	1.02706	.96321	.86550	.74194	.61824	.49567
220.0 /	.51559	.66760	.77306	.81133	.77386	.69483	.58508	.47658	.37305
210.0 /	.36535	.47397	.54851	.57054	.53524	.46752	.37864	.29705	.22443
200.0 /	.27202	.36108	.42612	.45185	.43076	.38158	.31364	.24962	.19174
190.0 /	.26599	.35812	.41816	.42934	.39438	.33759	.27116	.21491	.16617
180.0 /	.25836	.34121	.39004	.39735	.37339	.33967	.29857	.25546	.21008
170.0 /	.25649	.33378	.37352	.36987	.33595	.29072	.23985	.19487	.15379
160.0 /	.26878	.35541	.40083	.39477	.35252	.29549	.23143	.17770	.13209
150.0 /	.24918	.33797	.40464	.43001	.40878	.36133	.29627	.23472	.17887
140.0 /	.23797	.33251	.41720	.46550	.45718	.41404	.34589	.27732	.21298
130.0 /	.23984	.33931	.42880	.48302	.48278	.45190	.39646	.33332	.26784
120.0 /	.24867	.34993	.44573	.50449	.49954	.45597	.38530	.31323	.24427
110.0 /	.30115	.39321	.45546	.47249	.44153	.38150	.30194	.22989	.16767
100.0 /	.47019	.60647	.67086	.65178	.57567	.47399	.35985	.26631	.18982
90.0 /	.65308	.83192	.88349	.80906	.67898	.53450	.38931	.27888	.19290
80.0 /	.72034	.87402	.88003	.76181	.61262	.46596	.32955	.23106	.15707
70.0 /	.76663	.89766	.87678	.73817	.58128	.43458	.30264	.20951	.14065
60.0 /	.73484	.84353	.80748	.66780	.52303	.39539	.28384	.20395	.14295
50.0 /	.60256	.69205	.67357	.57680	.47042	.37368	.28602	.21948	.16482
40.0 /	.50909	.60920	.61726	.54766	.45368	.35723	.26335	.19212	.13595
30.0 /	.44523	.55070	.58550	.54949	.47279	.37973	.28090	.20373	.14259
20.0 /	.38741	.48453	.52612	.50804	.44927	.37223	.28585	.21455	.15527
10.0 /	.30323	.36980	.39336	.37561	.33233	.27618	.21173	.15741	.11229
360.0 /	.27209	.32972	.34790	.32922	.28883	.23885	.18382	.13857	.10094

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'N'-DAY
366 DAYS
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* 366-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.34651 AND OCCURRED AT (426.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 6000.0
350.0 /	.01858
340.0 /	.01620
330.0 /	.02210
320.0 /	.03624
310.0 /	.05331
300.0 /	.09425
290.0 /	.09007
280.0 /	.08995
270.0 /	.11239
260.0 /	.11498
250.0 /	.15954
240.0 /	.15372
230.0 /	.11637
220.0 /	.08261
210.0 /	.04571
200.0 /	.04133
190.0 /	.03725
180.0 /	.05242
170.0 /	.03585
160.0 /	.02579
150.0 /	.03671
140.0 /	.04403
130.0 /	.06237
120.0 /	.05295
110.0 /	.02985
100.0 /	.03247
90.0 /	.03021
80.0 /	.02372
70.0 /	.02035
60.0 /	.02383
50.0 /	.03428
40.0 /	.02314
30.0 /	.02300
20.0 /	.02785
10.0 /	.01905
360.0 /	.01862

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HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 230.0) *

DIRECTION / (DEGREES) /	185.0	241.0	RANGE (METERS) 315.0	426.0	555.0
350.0 /	58.69664 (315,12)	62.20230 (63,15)	62.74569 (249, 9)	56.31311 (249, 9)	62.01554 (105, 9)
340.0 /	73.51283 (355,12)	78.82128 (355,12)	67.22256 (355,12)	57.00690 (140,17)	63.88502 (228, 9)

330.0 /	75.73080 (170,11)	78.82128 (345,11)	67.22256 (345,11)	47.43199 (345,11)	40.68516 (124, 6)
320.0 /	70.25696 (212,14)	72.99061 (277,12)	62.09992 (277,12)	45.89364 (336,10)	48.90701 (18, 7)
310.0 /	73.63779 (212,14)	75.49070 (189, 9)	72.65868 (309, 8)	66.34680 (309, 8)	51.88980 (309, 8)
300.0 /	74.85271 (157,11)	78.82128 (345,12)	72.65881 (302,16)	66.34691 (302,16)	62.01559 (204,22)
290.0 /	68.12998 (157,11)	60.14213 (145, 9)	60.56815 (243, 9)	54.47178 (195, 8)	56.72517 (206,17)
280.0 /	59.02079 (247,11)	62.97424 (220,19)	77.07597 (220,19)	70.54804 (220,19)	62.01559 (213, 7)
270.0 /	74.85275 (120,11)	75.49069 (70,12)	72.65887 (290, 8)	66.34698 (290, 8)	56.72515 (358, 6)
260.0 /	73.16735 (242,10)	78.44465 (242,10)	79.84999 (98,10)	73.19144 (98,10)	57.47262 (98,10)
250.0 /	74.85271 (223,13)	69.88869 (250,15)	79.84998 (208,19)	73.19142 (208,19)	57.47260 (208,19)
240.0 /	73.16734 (170,18)	78.44464 (170,18)	77.07598 (216,18)	70.54807 (283,17)	55.31391 (283,17)
230.0 /	76.26174 (163,11)	78.44464 (91,14)	80.79599 (338,11)	74.09372 (338,11)	63.88503 (347, 8)
220.0 /	73.63776 (229,13)	78.44465 (241,17)	66.89129 (241,17)	54.28049 (258,17)	63.88503 (73, 1)
210.0 /	74.85273 (214,14)	77.32464 (195, 9)	65.90646 (195, 9)	46.83900 (190,11)	48.90699 (307,17)
200.0 /	68.16160 (193,13)	72.99067 (193,13)	62.09998 (193,13)	54.28049 (338,13)	48.90691 (220, 8)
190.0 /	68.16161 (342,15)	72.99067 (342,15)	79.84997 (209,17)	73.19141 (209,17)	57.47260 (209,17)
180.0 /	61.97802 (342,15)	66.26290 (342,15)	56.20546 (342,15)	45.89364 (257,10)	48.88147 (77, 9)
170.0 /	72.13987 (286,15)	77.32462 (286,15)	72.65881 (347, 9)	66.34692 (347, 9)	51.88991 (347, 9)
160.0 /	58.24086 (31,13)	62.97422 (192, 9)	77.07594 (192, 9)	70.54802 (192, 9)	63.88503 (25,22)
150.0 /	70.25697 (197,11)	65.18029 (202,18)	79.84996 (202,18)	73.19140 (202,18)	57.47259 (202,18)
140.0 /	73.63778 (197,11)	77.32460 (229,16)	72.65886 (201,17)	66.34698 (201,17)	51.88994 (201,17)
130.0 /	76.26174 (188,12)	78.82128 (314,16)	72.65885 (245,10)	66.34697 (245,10)	51.88995 (245,10)
120.0 /	58.24089 (292,14)	62.20237 (292,14)	66.88474 (207,17)	60.87093 (207,17)	56.72528 (207,20)
110.0 /	72.09995 (226,11)	75.49068 (292,14)	64.29485 (292,14)	51.95880 (101, 2)	63.88503 (101, 2)
100.0 /	72.13988 (61,16)	77.32463 (61,16)	65.90647 (61,16)	46.46002 (61,16)	48.90697 (106,12)
90.0 /	73.51282 (55,11)	78.82128 (55,11)	77.07590 (225,19)	70.54797 (225,19)	55.31384 (225,19)
80.0 /	73.63776 (188,11)	78.44464 (188,10)	79.84998 (135, 9)	73.19142 (135, 9)	57.47261 (135, 9)
70.0 /	72.13985 (258,15)	77.32460 (258,15)	65.90644 (258,15)	54.47166 (274,18)	48.90696 (86,15)
60.0 /	75.73080 (218,11)	77.32463 (308,13)	72.65886 (49,18)	66.34696 (49,18)	51.88993 (49,18)
50.0 /	58.69664 (209,12)	61.30341 (209,12)	72.65885 (218, 9)	66.34695 (218, 9)	51.88993 (218, 9)
40.0 /	61.97803 (163,10)	66.26293 (163,10)	79.84997 (348,17)	73.19141 (348,17)	57.47260 (348,17)
30.0 /	68.16158 (163,10)	72.99065 (163,10)	62.09996 (163,10)	54.28048 (274,15)	44.73642 (25,10)
20.0 /	73.16736 (230,12)	78.44464 (230,12)	77.07594 (162,18)	70.54803 (162,18)	55.31386 (162,18)
10.0 /	65.31177 (6,11)	69.88869 (6,11)	62.74568 (193,15)	56.31310 (193,15)	43.73467 (193,15)
360.0 /	70.45699 (193,14)	75.49075 (193,14)	79.84998 (197,18)	73.19141 (197,18)	57.47260 (197,18)

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HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 230.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	60.49762 (105, 9)	49.77721 (105, 9)	37.92099 (105, 9)	31.06706 (237, 1)	12.56258 (237, 1)
340.0 /	62.39924 (228, 9)	51.41948 (228, 9)	39.23331 (228, 9)	31.06706 (192,21)	12.56258 (192,21)
330.0 /	41.32687 (124, 6)	35.35732 (124, 6)	28.19652 (126, 5)	31.06706 (126, 5)	12.56258 (126, 5)
320.0 /	46.83583 (18, 7)	38.03941 (18, 7)	30.11431 (191,22)	26.86566 (194, 1)	10.42917 (194, 1)
310.0 /	48.30764 (236, 8)	39.29421 (236, 8)	32.00989 (237, 7)	25.85986 (237, 7)	11.76333 (357, 4)
300.0 /	60.49766 (204,22)	54.09499 (204, 6)	44.15392 (204, 6)	34.41574 (204, 6)	12.56258 (135, 1)
290.0 /	55.12957 (206,17)	45.15515 (206,17)	34.23897 (206,17)	31.06706 (217,22)	12.56258 (217,22)
280.0 /	60.49767 (213, 7)	49.77725 (213, 7)	41.68678 (169,20)	33.94676 (169,20)	12.56258 (215, 4)
270.0 /	55.12956 (358, 6)	45.15512 (358, 6)	37.91919 (289, 7)	31.75628 (289, 7)	12.56258 (172, 2)
260.0 /	48.30764 (17, 7)	46.17183 (259, 8)	41.68678 (259, 8)	33.94676 (259, 8)	12.56259 (167, 1)

250.0 /	55.12970 (170,20)	46.17183 (242, 7)	41.68678 (242, 7)	33.94676 (242, 7)	12.56258 (257, 7)
240.0 /	48.30764 (260, 8)	46.17183 (197, 6)	41.68678 (197, 6)	33.94676 (197, 6)	12.56258 (147,24)
230.0 /	62.39925 (347, 8)	51.41948 (347, 8)	41.68678 (193, 7)	33.94676 (193, 7)	12.56258 (167, 3)
220.0 /	62.39924 (73, 1)	51.41948 (73, 1)	39.23331 (73, 1)	31.06706 (190, 4)	12.56258 (190, 4)
210.0 /	46.83582 (307,17)	43.55680 (189,21)	39.21789 (189,21)	31.83626 (189,21)	10.42908 (144, 3)
200.0 /	46.83574 (220, 8)	38.03932 (220, 8)	30.11419 (204,21)	24.78534 (276, 5)	13.66573 (276, 5)
190.0 /	46.83574 (209,18)	38.03933 (209,18)	30.11420 (207,21)	24.25217 (207,21)	11.38055 (353,24)
180.0 /	47.21009 (77, 9)	38.37695 (77, 9)	32.00989 (273,22)	27.64750 (355,20)	12.17322 (355,20)
170.0 /	39.51116 (219, 8)	31.89888 (219, 8)	24.55572 (103,21)	26.86544 (103,21)	10.42906 (103,21)
160.0 /	62.39924 (25,22)	51.41948 (25,22)	39.23331 (25,22)	28.27218 (25,22)	10.42906 (309,20)
150.0 /	46.83575 (219,18)	38.03933 (219,18)	28.78786 (219,18)	20.61222 (219,18)	9.02168 (4,22)
140.0 /	47.21012 (225,20)	38.37698 (225,20)	30.11423 (136,20)	26.86561 (247,21)	10.42915 (247,21)
130.0 /	39.51116 (101, 3)	43.55687 (359,20)	39.21796 (359,20)	31.83632 (359,20)	12.56259 (253,23)
120.0 /	55.12968 (207,20)	45.15523 (207,20)	34.23904 (207,20)	24.49927 (207,20)	9.48160 (230,21)
110.0 /	62.39924 (101, 2)	51.41948 (101, 2)	39.23331 (101, 2)	28.27218 (101, 2)	9.63684 (86, 5)
100.0 /	46.83580 (106,12)	43.55684 (288,18)	39.21793 (288,18)	31.83629 (288,18)	10.42911 (255,21)
90.0 /	39.60269 (225,19)	33.81977 (229,20)	30.11425 (229,20)	26.86556 (224, 4)	10.42912 (224, 4)
80.0 /	41.21761 (135, 9)	33.81980 (255, 8)	30.11427 (255, 8)	24.25224 (255, 8)	11.06872 (5,22)
70.0 /	46.83578 (86,15)	38.03936 (86,15)	30.11425 (26,18)	24.25221 (26,18)	9.48160 (289,19)
60.0 /	39.51116 (224, 9)	36.56273 (217,21)	32.65017 (217,21)	26.25633 (217,21)	11.09848 (7, 3)
50.0 /	47.21011 (56, 8)	38.37697 (56, 8)	32.65025 (274,20)	31.06706 (225,22)	12.56258 (225,22)
40.0 /	46.83577 (25, 5)	38.03935 (25, 5)	28.78787 (25, 5)	26.86551 (290, 1)	10.42910 (290, 1)
30.0 /	42.68100 (25,10)	34.50777 (25,10)	25.99290 (25,10)	19.69425 (113,22)	7.64232 (113,22)
20.0 /	46.83580 (234,19)	38.03937 (234,19)	28.78790 (234,19)	24.71613 (5, 9)	7.64232 (189, 1)
10.0 /	38.30747 (346,12)	33.81973 (196,21)	30.11422 (196,21)	24.25219 (196,21)	6.38008 (142,23)
360.0 /	55.12966 (197,16)	45.15520 (197,16)	34.23901 (197,16)	26.86558 (111,21)	10.42913 (111,21)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 79.84999 AND OCCURRED AT (315.0, 260.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	58.24082 (63,15)	62.20225 (193,14)	52.65689 (63,15)	50.49454 (105, 9)	62.01554 (302, 1)
340.0 /	70.45696 (63,15)	75.49072 (63,15)	64.29489 (63,15)	54.28053 (289, 9)	48.90695 (217,19)
330.0 /	73.51282 (345,11)	77.32462 (314,14)	65.90645 (314,14)	46.46001 (314,14)	38.55239 (83, 7)
320.0 /	68.16154 (277,12)	62.20233 (189, 9)	52.65692 (189, 9)	43.65408 (277,12)	44.73655 (18, 8)
310.0 /	70.45695 (189, 9)	66.26299 (277,12)	64.29487 (189, 9)	51.05000 (202, 7)	50.38073 (236, 8)
300.0 /	73.51282 (345,12)	60.14215 (192,16)	67.22256 (345,12)	54.47166 (195, 8)	62.01559 (338, 5)
290.0 /	57.60455 (145, 9)	60.14213 (204, 9)	60.11145 (195, 8)	54.28046 (243, 9)	56.72506 (257, 9)
280.0 /	58.24088 (70,12)	62.20237 (70,12)	72.65878 (51,11)	66.34691 (51,11)	62.01559 (345, 9)
270.0 /	70.45692 (70,12)	61.01118 (146,10)	66.88469 (203, 7)	60.87088 (203, 7)	51.88994 (290, 8)
260.0 /	68.12991 (120,11)	65.18031 (98,10)	79.84999 (315, 9)	73.19144 (315, 9)	57.47262 (315, 9)
250.0 /	65.31176 (250,15)	65.18031 (208,19)	72.65875 (182,18)	66.34689 (182,18)	56.72529 (170,20)
240.0 /	68.12997 (223,13)	69.88868 (250,15)	77.07598 (283,17)	70.54806 (216,18)	55.31390 (216,18)
230.0 /	73.16736 (188, 9)	78.44464 (188, 9)	66.89128 (91,14)	56.31310 (220,17)	58.21022 (338,11)
220.0 /	73.16737 (241,17)	78.44464 (259,11)	66.89128 (259,11)	51.95879 (73, 1)	56.72526 (195, 7)
210.0 /	72.13988 (195, 9)	66.26292 (224,12)	56.20547 (224,12)	46.83900 (286,16)	41.64980 (25,24)
200.0 /	68.12994 (214,14)	54.37395 (214,14)	60.56818 (338,13)	44.23771 (78,10)	42.09252 (338,13)
190.0 /	61.97802 (193,13)	66.26290 (193,13)	62.09997 (342,15)	46.83905 (256,10)	48.90691 (209,18)
180.0 /	45.33457 (156,10)	46.56747 (156,10)	51.76293 (257,10)	44.23770 (55,10)	41.64980 (155, 8)

170.0 /	70.45694 (31,13)	75.49071 (31,13)	65.90645 (286,15)	46.46001 (286,15)	41.64980 (219, 8)
160.0 /	54.18773 (286,15)	62.20234 (31,13)	62.74566 (201,14)	56.31309 (201,14)	55.31387 (192, 9)
150.0 /	59.02079 (163,12)	62.97421 (320,17)	77.07594 (320,17)	70.54803 (320,17)	55.31387 (320,17)
140.0 /	72.13986 (229,16)	59.45720 (201,17)	65.90644 (229,16)	56.31309 (189,19)	48.90699 (209,15)
130.0 /	73.51281 (314,16)	60.96832 (188,12)	67.22256 (314,16)	47.53331 (207,17)	41.64980 (101, 3)
120.0 /	57.30187 (188,12)	54.85110 (207,17)	66.88471 (224,11)	60.87089 (224,11)	48.90696 (47,18)
110.0 /	70.45692 (292,14)	62.20239 (335,13)	52.73215 (224,11)	51.95880 (146,20)	63.88503 (146,20)
100.0 /	72.09995 (226,11)	75.49068 (335,13)	64.29485 (335,13)	45.27108 (335,13)	40.43170 (358,17)
90.0 /	70.25700 (188,11)	62.97418 (225,19)	67.22256 (55,11)	47.43199 (55,11)	40.43171 (337,17)
80.0 /	73.16734 (188,10)	65.18031 (135, 9)	66.89128 (188,10)	60.87093 (46,18)	47.44024 (46,18)
70.0 /	65.74296 (218,11)	58.71916 (290,12)	60.11134 (274,18)	47.53332 (46,18)	44.73646 (196,19)
60.0 /	72.13988 (308,13)	61.30342 (194,11)	65.90646 (308,13)	54.28049 (230,13)	42.09252 (230,13)
50.0 /	57.80119 (145,12)	59.45720 (218, 9)	60.11135 (165, 9)	54.47169 (165, 9)	48.90696 (44,16)
40.0 /	58.88423 (225,11)	65.18029 (348,17)	72.65884 (207,19)	66.34696 (207,19)	51.88993 (207,19)
30.0 /	68.16157 (102,15)	72.99064 (102,15)	62.09995 (102,15)	43.65410 (163,10)	44.73641 (148,16)
20.0 /	65.31177 (6,11)	69.88869 (6,11)	66.89128 (230,12)	56.31309 (172, 9)	48.90697 (234,19)
10.0 /	61.97801 (204,10)	66.26290 (204,10)	60.56817 (195,13)	54.28048 (195,13)	42.09251 (195,13)
360.0 /	68.16159 (204,10)	72.99066 (204,10)	64.29491 (193,14)	46.34177 (197,16)	56.72525 (197,16)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 79.84999 AND OCCURRED AT (315.0, 260.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	60.49762 (302, 1)	49.77721 (302, 1)	37.92099 (302, 1)	27.27824 (105, 9)	7.87135 (99,20)
340.0 /	46.83578 (217,19)	38.03936 (217,19)	30.11424 (230, 5)	28.27218 (228, 9)	7.64232 (142, 4)
330.0 /	36.55087 (83, 7)	29.32832 (83, 7)	28.00441 (124, 6)	21.45951 (124, 6)	7.64232 (119, 4)
320.0 /	42.68113 (18, 8)	34.50787 (18, 8)	28.78792 (18, 7)	26.86543 (110,23)	10.42906 (110,23)
310.0 /	39.51116 (171, 8)	35.84994 (237, 7)	30.11422 (233,24)	24.38058 (357, 4)	9.48160 (141, 1)
300.0 /	60.49766 (338, 5)	49.77725 (204,22)	41.68678 (226, 7)	33.94676 (226, 7)	11.06872 (57, 3)
290.0 /	55.12946 (257, 9)	45.15504 (257, 9)	34.23888 (257, 9)	26.86540 (136, 5)	11.20890 (34, 7)
280.0 /	60.49767 (345, 9)	49.77725 (345, 9)	39.21783 (215,20)	31.83632 (215,20)	10.42919 (187, 2)
270.0 /	47.21014 (165, 8)	40.39617 (289, 7)	34.23895 (358, 6)	31.06706 (172, 2)	12.56258 (209, 5)
260.0 /	48.30764 (50, 7)	39.29422 (17, 7)	32.65030 (194, 6)	31.06705 (167, 1)	12.56259 (304, 2)
250.0 /	55.12970 (358, 9)	45.15524 (170,20)	39.21794 (190,21)	31.83630 (190,21)	12.56258 (308, 5)
240.0 /	48.30764 (315, 8)	39.29421 (260, 8)	32.65033 (278,19)	31.06706 (147,24)	12.56258 (209,22)
230.0 /	55.12970 (358, 8)	46.17183 (193, 7)	39.23331 (347, 8)	31.06706 (167, 3)	12.56258 (260, 5)
220.0 /	55.12967 (195, 7)	45.15521 (195, 7)	34.23903 (195, 7)	31.06706 (193, 6)	12.56258 (193, 6)
210.0 /	39.51116 (25,24)	38.03939 (307,17)	32.00989 (307,20)	26.86548 (144, 3)	9.49337 (321,23)
200.0 /	38.30748 (343, 9)	33.81971 (204,21)	28.78785 (220, 8)	24.25217 (204,21)	8.80204 (354,22)
190.0 /	41.21760 (209,17)	33.81971 (207,21)	28.78786 (209,18)	21.61810 (353,24)	9.76554 (283, 4)
180.0 /	39.51116 (155, 8)	35.84994 (273,22)	28.87265 (77, 9)	26.86542 (146, 1)	10.42905 (146, 1)
170.0 /	37.97892 (229, 9)	30.54692 (229, 9)	24.51588 (151,21)	20.81196 (291,20)	9.44777 (357,24)
160.0 /	42.68098 (227,18)	34.50775 (227,18)	25.99289 (227,18)	26.86545 (309,20)	9.58771 (76,22)
150.0 /	41.21759 (202,18)	28.38986 (76,19)	25.07145 (76,19)	20.00175 (76,19)	7.64232 (121,22)
140.0 /	46.83582 (209,15)	38.03939 (209,15)	28.87268 (225,20)	24.25221 (136,20)	9.48160 (338,20)
130.0 /	39.28751 (359,20)	31.89888 (101, 3)	28.19652 (253,23)	31.06705 (253,23)	10.42910 (17,19)
120.0 /	46.83578 (47,18)	38.03936 (47,18)	28.78789 (47,18)	24.06673 (230,21)	9.37245 (98, 1)
110.0 /	62.39924 (146,20)	51.41948 (146,20)	39.23331 (146,20)	28.27218 (146,20)	6.34445 (117,20)
100.0 /	39.28749 (288,18)	38.03937 (106,12)	32.65033 (86,19)	26.86554 (255,21)	7.20628 (288,18)

90.0 /	38.30751 (337,17)	30.88029 (337,17)	26.05907 (194,20)	24.25222 (229,20)	7.64232 (231, 5)
80.0 /	34.90974 (6,17)	28.01360 (6,17)	26.27221 (44,21)	22.02954 (44,21)	5.68921 (85, 1)
70.0 /	42.68103 (196,19)	34.50779 (196,19)	28.78788 (86,15)	24.06673 (289,19)	7.87139 (79,20)
60.0 /	37.04711 (49,18)	31.89888 (224, 9)	25.07140 (26,20)	24.06673 (248,21)	9.48160 (248,21)
50.0 /	46.83578 (44,16)	38.03936 (44,16)	28.87267 (56, 8)	26.86553 (194,22)	10.42910 (194,22)
40.0 /	42.68100 (335,17)	34.50776 (335,17)	25.99290 (335,17)	26.86549 (226, 1)	10.42908 (226, 1)
30.0 /	42.68098 (148,16)	34.50774 (148,16)	25.99289 (148,16)	19.65272 (27, 3)	5.29659 (182, 5)
20.0 /	42.68099 (274,13)	34.50776 (274,13)	27.41747 (5, 9)	20.61224 (234,19)	7.62432 (24,24)
10.0 /	31.15342 (193,15)	30.88027 (346,12)	24.51589 (18,21)	19.65268 (18,21)	6.34443 (85,21)
360.0 /	46.83580 (85, 8)	38.03971 (85, 8)	28.79620 (85, 8)	24.49926 (197,16)	7.87138 (119, 5)

1

HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 48.93504 AND OCCURRED AT (185.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	26.01737 (103, 5)	25.49181 (103, 5)	21.72592 (294, 5)	22.16006 (200, 3)	20.67185C(105, 3)
340.0 /	24.50428C(355, 4)	26.27376C(355, 4)	25.94576 (127, 3)	23.11581 (127, 3)	21.29501 (228, 3)
330.0 /	33.02749 (208, 4)	32.13568 (356, 4)	32.49139 (356, 4)	26.27421 (356, 4)	22.80692 (364, 6)
320.0 /	36.36235 (277, 4)	38.37440 (292, 4)	35.82922 (292, 4)	27.40596 (292, 4)	31.21452 (18, 3)
310.0 /	35.10218 (212, 5)	39.99128 (189, 3)	38.95425 (189, 3)	30.81289 (202, 3)	25.66266 (202, 3)
300.0 /	37.04740 (158, 5)	29.25581 (210, 4)	30.71665 (302, 6)	35.72103 (302, 6)	36.96567 (204, 8)
290.0 /	28.85307 (158, 5)	28.72113 (246, 4)	29.66795 (163, 3)	28.39050 (163, 3)	24.41615 (163, 3)
280.0 /	34.46786 (207, 4)	31.50974 (204, 3)	32.53095 (204, 3)	31.24459C(51, 4)	27.92111C(51, 4)
270.0 /	44.44258 (207, 4)	37.75867 (207, 4)	32.30169 (211, 6)	29.67186 (49, 4)	25.75513 (49, 4)
260.0 /	37.01941 (70, 4)	38.17017 (70, 4)	31.58030 (70, 4)	25.05013 (315, 3)	23.19057 (363, 2)
250.0 /	31.39963 (116, 5)	27.62193 (303, 5)	28.32292 (46, 4)	24.51210 (46, 4)	27.55882 (274, 2)
240.0 /	28.55564 (91, 5)	39.27511C(283, 6)	47.98690C(283, 6)	43.80633C(283, 6)	34.25137C(283, 6)
230.0 /	35.11936 (192, 4)	35.16725 (91, 5)	29.63945 (91, 5)	25.30260 (191, 3)	27.24035 (16, 3)
220.0 /	40.24763 (192, 4)	35.87504 (192, 4)	26.88350 (250, 4)	28.10119 (4, 4)	26.72511 (4, 4)
210.0 /	28.14648 (133, 5)	31.26826 (190, 4)	31.18243 (190, 4)	25.08182 (190, 4)	19.56604 (330, 2)
200.0 /	28.19485 (133, 5)	29.08686 (342, 4)	27.73966 (342, 4)	21.47160 (342, 4)	18.68002 (12, 1)
190.0 /	40.16359 (342, 5)	44.95830 (342, 5)	39.96918 (342, 5)	38.05302 (209, 6)	35.45995 (209, 6)
180.0 /	38.45760 (131, 5)	41.51270 (342, 5)	36.98143 (342, 5)	27.09260 (342, 5)	18.49722 (342, 5)
170.0 /	28.16612 (221, 4)	31.13092 (31, 5)	28.09373 (31, 5)	22.66565 (151, 3)	17.29664 (347, 3)
160.0 /	31.56402 (229, 4)	31.27540 (229, 4)	28.79844 (293, 5)	23.51601C(192, 3)	21.29501 (25, 8)
150.0 /	23.92981 (229, 4)	24.15655 (228, 6)	30.80512 (202, 6)	31.87804 (202, 6)	27.79223 (202, 6)
140.0 /	24.54593 (197, 4)	27.53551 (229, 6)	27.81244 (229, 6)	27.89999 (189, 7)	25.20270 (189, 7)
130.0 /	25.56662 (147, 5)	26.44867 (314, 6)	24.21962 (245, 4)	22.11566 (245, 4)	17.29665 (245, 4)
120.0 /	30.28287 (226, 4)	30.85068 (77, 4)	31.83429 (77, 4)	26.25896 (77, 4)	20.92261 (101, 3)
110.0 /	43.70691 (226, 4)	34.70149 (226, 4)	23.37195 (226, 4)	17.90165 (101, 1)	22.42009 (101, 1)
100.0 /	39.56955 (226, 4)	31.39155 (226, 4)	27.97381 (245, 6)	26.65162 (245, 6)	22.86236 (245, 6)
90.0 /	40.75414 (154, 4)	41.52735 (154, 4)	34.32285 (154, 4)	23.72002 (154, 4)	22.85242 (177, 7)
80.0 /	48.93504 (188, 4)	45.76123 (188, 4)	35.55724 (188, 4)	27.56417 (46, 6)	21.32197 (46, 6)
70.0 /	36.92015 (309, 4)	37.82383 (309, 4)	33.27968 (50, 6)	40.21050 (86, 5)	41.54795 (86, 5)
60.0 /	39.85749 (225, 4)	34.55901 (225, 4)	27.50840 (194, 4)	22.11565 (49, 6)	18.10167 (50, 6)
50.0 /	40.88134 (238, 5)	37.89853 (238, 5)	29.30147 (238, 5)	24.20139 (289, 6)	23.22308 (289, 6)
40.0 /	25.87562 (238, 5)	29.27033 (357, 4)	29.07584 (357, 4)	25.27531C(348, 6)	25.70173 (274, 6)
30.0 /	29.22748 (102, 5)	30.99146 (102, 5)	26.09210 (102, 5)	24.15884 (25, 4)	28.53625 (25, 4)
20.0 /	38.05008 (102, 5)	40.21157 (102, 5)	33.88527 (102, 5)	23.62269 (102, 5)	18.43795 (162, 6)

10.0 /	24.30790 (102, 5)	29.01273 (193, 5)	30.38648 (193, 5)	25.18868 (193, 5)	18.66096 (193, 5)
360.0 /	27.83727 (186, 5)	29.48714 (193, 5)	34.48900 (197, 6)	39.84440 (197, 6)	38.06595 (197, 6)

1

HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 48.93504 AND OCCURRED AT (185.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	20.16587C(105, 3)	16.59241C(105, 3)	12.64033C(105, 3)	10.35654 (237, 1)	4.18755 (237, 1)
340.0 /	20.79975 (228, 3)	17.13983 (228, 3)	13.07777 (228, 3)	10.35617C(192, 7)	4.18753C(192, 7)
330.0 /	18.81404 (364, 6)	13.84201 (364, 6)	10.82065 (183, 1)	10.36069 (126, 2)	4.18779 (126, 2)
320.0 /	29.83899 (18, 3)	24.18242 (18, 3)	18.26030 (18, 3)	13.04160 (18, 3)	3.51429 (110, 8)
310.0 /	20.77411C(237, 3)	19.73177C(237, 3)	16.42230C(237, 3)	14.58699 (293, 1)	5.70797 (293, 1)
300.0 /	35.90257 (204, 8)	29.38472 (204, 8)	23.71064 (226, 3)	18.01147 (226, 3)	5.24755 (126, 8)
290.0 /	22.12102 (206, 6)	17.97744 (206, 6)	16.47529 (215, 2)	15.02145 (215, 2)	4.42763 (215, 2)
280.0 /	23.83896 (213, 3)	18.89279 (213, 3)	14.38632 (169, 7)	12.34420 (302, 8)	4.18760 (215, 2)
270.0 /	20.23880 (49, 4)	17.11343 (168, 1)	14.66292 (168, 1)	13.51367 (198, 1)	4.87263 (198, 1)
260.0 /	21.72205 (363, 2)	18.33940 (209, 2)	16.79037 (304, 1)	18.37793 (304, 1)	7.34806 (304, 1)
250.0 /	27.82409 (26, 1)	24.59967 (26, 1)	19.59005 (26, 1)	19.44450 (297, 1)	7.28494 (297, 1)
240.0 /	27.91609 (353, 6)	25.27257 (353, 6)	20.53973 (353, 6)	16.31751 (355, 3)	6.84670 (315, 2)
230.0 /	25.86356 (16, 3)	23.17237 (193, 3)	19.64790 (193, 3)	15.32615 (193, 3)	5.74892 (353, 8)
220.0 /	22.96756 (195, 3)	18.79744 (285, 7)	16.44769 (285, 7)	13.05533 (285, 7)	4.18753C(190, 2)
210.0 /	18.07519 (330, 2)	15.01907 (270, 8)	13.07263 (189, 7)	10.61209 (189, 7)	3.47636 (144, 1)
200.0 /	17.49646 (12, 1)	14.98530 (273, 8)	12.43310 (273, 8)	9.62931 (151, 2)	4.55524 (276, 2)
190.0 /	29.35118 (209, 6)	21.65044 (209, 6)	15.40382 (209, 6)	10.47712 (209, 6)	4.56513 (3, 8)
180.0 /	15.73670C(77, 3)	12.79232C(77, 3)	10.66996 (273, 8)	9.21583 (355, 7)	4.05774 (355, 7)
170.0 /	13.90229 (32, 6)	12.68485 (3, 6)	10.64037 (3, 6)	8.95515 (103, 7)	3.47635 (103, 7)
160.0 /	20.79975 (25, 8)	17.13983 (25, 8)	13.07777 (25, 8)	9.42406 (25, 8)	3.47635C(309, 7)
150.0 /	21.76465 (202, 6)	15.71457 (67, 3)	13.18714 (76, 7)	10.83594 (56, 7)	3.73160 (56, 7)
140.0 /	20.35001 (189, 7)	19.20971 (136, 7)	15.94687 (136, 7)	12.24405 (136, 7)	3.60932 (247, 7)
130.0 /	16.19373 (155, 7)	17.36321 (155, 7)	16.34969 (155, 7)	14.14852 (155, 7)	4.18753C(253, 8)
120.0 /	18.37656 (207, 7)	15.80476 (224, 7)	13.11617 (224, 7)	11.47044 (254, 3)	4.85033 (115, 7)
110.0 /	22.26337 (101, 1)	18.58610 (101, 1)	14.24675 (101, 1)	10.26703 (101, 1)	4.62193 (86, 2)
100.0 /	18.01076C(358, 6)	14.51896 (288, 6)	13.07265 (288, 6)	10.61210 (288, 6)	3.47637 (255, 7)
90.0 /	21.16880 (177, 7)	17.17499 (231, 3)	13.55396 (231, 3)	11.22188 (194, 7)	3.47637C(224, 2)
80.0 /	16.32436 (26, 6)	12.96779 (26, 6)	10.03809C(255, 3)	8.08408C(255, 3)	3.68957C(5, 8)
70.0 /	36.83085 (86, 5)	28.52019 (86, 5)	20.97588 (86, 5)	14.68486 (86, 5)	3.16548 (289, 7)
60.0 /	15.06795 (50, 6)	14.24871 (248, 7)	14.91452 (248, 7)	13.91112 (248, 7)	4.32849 (248, 7)
50.0 /	22.22659 (56, 3)	21.36741 (56, 3)	18.09987 (56, 3)	17.29303 (225, 8)	6.81132 (225, 8)
40.0 /	24.36738 (274, 6)	19.55231 (274, 6)	14.61283 (274, 6)	10.31562 (274, 6)	3.50591C(226, 1)
30.0 /	27.11110 (25, 4)	21.86984 (25, 4)	16.46872 (25, 4)	11.73658 (25, 4)	3.55719 (113, 8)
20.0 /	15.69907 (274, 5)	12.67979C(234, 7)	10.91843 (100, 7)	9.80863 (100, 7)	3.03254 (25, 1)
10.0 /	15.35630 (65, 6)	12.46156 (180, 7)	11.39283 (85, 7)	10.50414 (85, 7)	3.15915 (85, 7)
360.0 /	32.11575 (197, 6)	24.02237 (197, 6)	17.22086 (197, 6)	11.77280 (197, 6)	3.47640 (111, 7)

1

2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 40.14667 AND OCCURRED AT (185.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	20.38768 (186, 5)	23.20238 (294, 5)	20.91523 (249, 3)	18.77104 (249, 3)	20.67185C(302, 1)
340.0 /	23.80545 (63, 5)	25.46918 (63, 5)	22.40752C(355, 4)	19.00230 (140, 6)	18.72740 (166, 6)
330.0 /	25.24360 (170, 4)	30.47872 (208, 4)	27.83111 (166, 3)	24.59984 (364, 6)	19.17958 (356, 4)
320.0 /	33.33442 (208, 4)	38.21559 (277, 4)	32.16464 (277, 4)	26.18913 (18, 3)	19.97663 (128, 3)
310.0 /	31.81585 (189, 3)	32.48188 (277, 4)	31.84716 (202, 3)	30.70338 (189, 3)	22.04114 (189, 3)
300.0 /	29.00064 (210, 4)	29.16594 (158, 5)	25.79192 (145, 3)	30.21728 (204, 8)	35.84216 (302, 6)
290.0 /	28.44077 (246, 4)	26.98824 (163, 3)	25.25553 (212, 4)	22.09118 (212, 4)	23.01069 (206, 6)
280.0 /	32.08448 (120, 4)	29.64357 (76, 4)	29.28949C(51, 4)	26.74757 (204, 3)	26.00571 (213, 3)
270.0 /	35.54008 (146, 4)	36.85609 (70, 4)	30.84717 (70, 4)	26.30599 (211, 6)	22.09237 (212, 3)
260.0 /	32.84557 (207, 4)	26.78107 (207, 4)	26.91169 (334, 5)	24.74736 (296, 6)	22.74171 (17, 3)
250.0 /	30.27191 (227, 4)	27.35855 (227, 4)	26.61666C(208, 7)	24.39714C(208, 7)	26.58113 (26, 1)
240.0 /	27.83727 (132, 4)	32.97392 (250, 5)	32.32885 (259, 6)	31.41071 (259, 6)	30.19267 (260, 3)
230.0 /	33.36422 (91, 5)	33.20243 (250, 4)	28.15829 (250, 4)	24.85801 (188, 3)	26.03198 (347, 3)
220.0 /	29.32080 (241, 5)	30.08380 (241, 6)	26.83541 (192, 4)	26.75822 (195, 3)	26.30450 (195, 3)
210.0 /	24.95091 (214, 5)	28.33766 (133, 5)	23.28108 (68, 6)	20.28158 (68, 6)	19.46250 (131, 6)
200.0 /	23.71990 (342, 4)	28.45619 (133, 5)	23.94376 (190, 4)	19.11230 (190, 4)	16.30231C(220, 3)
190.0 /	30.82655 (131, 5)	27.49030 (131, 5)	33.91615 (209, 6)	29.27193 (342, 5)	20.00108 (342, 5)
180.0 /	36.94101 (342, 5)	35.62847 (131, 5)	27.54584 (131, 5)	19.76321 (31, 4)	16.89285 (32, 6)
170.0 /	27.46054 (61, 4)	30.06892 (61, 4)	26.65634 (229, 4)	22.11564 (347, 3)	17.20631 (151, 3)
160.0 /	29.85614 (78, 4)	30.56316 (78, 4)	26.13535 (31, 5)	22.65191 (293, 5)	18.43796C(192, 3)
150.0 /	23.41899 (197, 4)	22.98536 (202, 6)	26.46099 (320, 6)	24.76225 (320, 6)	21.34549 (67, 3)
140.0 /	24.25632 (229, 6)	21.93853 (245, 5)	25.98512 (189, 7)	26.03729 (229, 6)	22.62096 (229, 6)
130.0 /	25.42975 (188, 4)	22.68925 (147, 5)	22.93768 (314, 6)	18.05399 (221, 6)	16.10118 (122, 6)
120.0 /	22.79498 (77, 4)	23.88903 (226, 4)	22.29491 (207, 6)	21.06708 (101, 3)	19.44935 (77, 4)
110.0 /	25.81852 (222, 5)	26.19884 (222, 5)	21.59568 (222, 5)	17.71441 (232, 4)	21.29501 (146, 7)
100.0 /	24.63037 (154, 4)	25.77493 (61, 6)	21.96886 (61, 6)	21.41553C(358, 6)	21.01243C(358, 6)
90.0 /	40.14667 (188, 4)	36.48963 (188, 4)	27.89968 (55, 4)	23.51599 (225, 7)	20.97742 (231, 3)
80.0 /	34.50219 (309, 4)	35.16727 (309, 4)	30.73926 (46, 6)	24.39714C(135, 3)	19.15754C(135, 3)
70.0 /	36.01862 (225, 4)	36.33061C(290, 4)	31.27433 (309, 4)	29.56310 (50, 6)	22.77251 (50, 6)
60.0 /	35.28898 (194, 4)	34.40047 (194, 4)	26.53120 (308, 5)	20.38101 (51, 5)	17.29665 (49, 6)
50.0 /	31.44420 (225, 4)	30.12584 (308, 5)	25.73835 (357, 4)	22.11565 (218, 3)	19.82374 (56, 3)
40.0 /	25.55865 (242, 5)	24.38123 (129, 4)	27.72498C(348, 6)	23.31577 (357, 4)	24.27142 (25, 2)
30.0 /	22.72053 (163, 4)	24.33022 (163, 4)	23.84463 (102, 6)	20.79265 (102, 6)	19.73718 (126, 6)
20.0 /	24.38912C(230, 4)	26.50152 (200, 4)	25.69198 (162, 6)	23.51601 (162, 6)	17.15610 (274, 5)
10.0 /	21.77059C(6, 4)	25.38556 (102, 5)	22.08560 (85, 6)	19.26116 (85, 6)	17.11636 (105, 5)
360.0 /	25.95911 (193, 5)	24.48491 (186, 5)	26.37028 (193, 5)	19.26962 (193, 5)	18.76788 (25, 3)

1 2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 40.14667 AND OCCURRED AT (185.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0

350.0 /	20.16587C(302, 1)	16.59241C(302, 1)	12.64033C(302, 1)	9.09275C(105, 3)	2.87167 (99, 7)
340.0 /	17.24218 (166, 6)	13.51968 (166, 6)	10.03808 (230, 2)	9.42406 (228, 3)	2.54744 (142, 2)
330.0 /	15.12024 (10, 4)	11.99847 (10, 4)	9.84406 (364, 6)	9.83717 (183, 1)	2.89257 (183, 1)
320.0 /	17.49929 (65, 3)	14.23857 (87, 1)	10.90657 (65, 3)	9.55554 (246, 8)	3.47639C(194, 1)
310.0 /	19.43887 (202, 3)	13.73374 (366, 6)	13.49342 (293, 1)	12.63054C(237, 3)	4.17030 (198, 8)
300.0 /	32.59126 (302, 6)	29.12877 (226, 3)	22.26455 (204, 8)	15.91850 (204, 8)	4.35752 (112, 1)
290.0 /	19.25339 (163, 3)	16.57279 (167, 7)	13.93044 (167, 7)	12.39681 (215, 1)	4.18753C(217, 8)
280.0 /	22.31457C(51, 4)	17.26523C(345, 3)	14.07343 (213, 3)	11.61919 (169, 7)	4.12863 (57, 2)
270.0 /	19.53018 (217, 3)	16.78272 (43, 7)	14.60915 (213, 1)	13.48824 (213, 1)	4.66114 (292, 1)
260.0 /	21.43303 (17, 3)	17.32864 (363, 2)	16.19291 (209, 2)	15.89253C(198, 2)	6.10016C(198, 2)
250.0 /	25.86521 (274, 2)	20.85969 (242, 3)	18.07935 (297, 1)	17.29087 (351, 8)	6.58309 (351, 8)
240.0 /	26.86711 (260, 3)	23.28882 (355, 3)	20.30806 (209, 1)	16.28822 (209, 1)	5.24190 (165, 1)
230.0 /	25.09377 (347, 3)	20.84044 (16, 3)	15.67117 (16, 3)	14.84059 (260, 2)	5.68814 (260, 2)
220.0 /	22.74191 (14, 2)	18.05990 (14, 2)	13.45925 (14, 2)	10.35569C(190, 2)	4.18753C(193, 2)
210.0 /	16.48330 (131, 6)	14.51893 (189, 7)	12.56806 (270, 8)	9.70452 (270, 8)	3.16446 (321, 8)
200.0 /	15.88587 (273, 8)	13.95361 (12, 1)	12.17917 (151, 2)	9.54169 (273, 8)	2.93401 (354, 8)
190.0 /	13.45972 (31, 3)	11.27324 (207, 7)	10.03807 (207, 7)	9.17533 (3, 8)	3.79352 (353, 8)
180.0 /	13.72030 (32, 6)	11.94998 (273, 8)	10.37723 (300, 1)	9.15875 (300, 1)	3.51462 (344, 7)
170.0 /	13.62024 (3, 6)	12.31823 (130, 7)	10.16639 (130, 7)	8.30860 (3, 6)	3.14926C(357, 8)
160.0 /	16.78948 (19, 4)	13.26521 (19, 4)	9.87564 (19, 4)	8.95515C(309, 7)	3.19590C(76, 8)
150.0 /	19.79421 (67, 3)	15.38918 (325, 6)	11.75233 (67, 3)	10.68569 (76, 7)	3.00723C(4, 8)
140.0 /	20.34425 (136, 7)	15.25506 (31, 6)	12.92726 (154, 7)	10.14012 (172, 7)	3.16053C(338, 7)
130.0 /	15.36555 (223, 7)	14.53651 (223, 7)	13.07265 (359, 7)	11.42225C(172, 8)	4.12440C(172, 8)
120.0 /	18.10093 (101, 3)	15.05174 (207, 7)	12.16746 (254, 3)	10.65513 (115, 7)	3.56726 (254, 3)
110.0 /	20.79975 (146, 7)	17.13983 (146, 7)	13.07777 (146, 7)	10.25597 (86, 2)	2.62601 (36, 1)
100.0 /	18.00534 (245, 6)	14.03189 (176, 7)	11.58643 (176, 7)	8.95518 (255, 7)	2.40209 (288, 6)
90.0 /	20.02750 (231, 3)	16.73050 (177, 7)	13.08354 (194, 7)	10.03809 (231, 3)	2.83337 (194, 7)
80.0 /	15.09460 (46, 6)	11.27327C(255, 3)	9.64805 (26, 6)	7.34318C(44, 7)	1.89640C(85, 1)
70.0 /	19.08006 (178, 1)	15.02439 (178, 1)	11.11163 (178, 1)	8.21085 (26, 6)	2.62380C(79, 7)
60.0 /	14.38832 (175, 2)	12.35547 (175, 2)	10.88339 (217, 7)	8.75211 (217, 7)	3.69950C(7, 1)
50.0 /	19.62598 (289, 6)	16.22966C(274, 7)	15.83601 (225, 8)	14.16168 (56, 3)	5.59208 (109, 8)
40.0 /	23.01650 (25, 2)	18.47828 (25, 2)	13.82195 (25, 2)	9.77031 (25, 2)	3.47637C(290, 1)
30.0 /	17.74588 (18, 8)	14.12228 (18, 8)	10.61928 (232, 3)	9.66020 (113, 8)	2.21926 (125, 8)
20.0 /	15.61193C(234, 7)	12.36901 (274, 5)	9.66889 (24, 6)	8.23871C(5, 3)	2.76593 (100, 7)
10.0 /	13.90312 (105, 5)	12.15646 (65, 6)	10.22134 (180, 7)	8.08406 (196, 7)	2.12669C(142, 8)
360.0 /	17.52529 (25, 3)	13.93408 (25, 3)	11.88101 (341, 2)	10.23048 (341, 2)	2.78861 (341, 2)

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HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 32.89891 AND OCCURRED AT (241.0, 70.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	12.25663 (215, 2)	12.70226 (215, 2)	10.64080 (215, 2)	9.19799 (202, 2)	8.85936C(302, 1)
340.0 /	12.24842 (289, 2)	15.15818 (289, 2)	14.77727 (289, 2)	11.72856 (289, 2)	9.13788 (18, 2)
330.0 /	15.98960 (208, 2)	15.06631 (208, 2)	12.18427 (356, 2)	9.85283 (356, 2)	7.83932 (83, 1)
320.0 /	19.43249 (210, 2)	19.77575 (210, 2)	16.92170 (292, 2)	14.05934 (57, 2)	11.70544 (18, 1)
310.0 /	22.88437 (210, 2)	22.51131 (302, 2)	26.15357 (302, 2)	22.94817 (302, 2)	17.47886 (302, 2)
300.0 /	20.18583 (210, 2)	22.21639 (302, 2)	26.05164 (302, 2)	23.07144 (302, 2)	17.70782 (302, 2)

290.0 /	15.17639 (159, 2)	15.29847 (159, 2)	15.47580 (212, 2)	13.06283 (212, 2)	9.76809 (212, 2)
280.0 /	16.04485 (167, 2)	17.74334 (167, 2)	16.26197 (168, 2)	15.29999 (168, 2)	16.84405C(203, 1)
270.0 /	16.66994 (207, 2)	14.48258 (49, 2)	16.40010 (160, 2)	15.85436 (160, 2)	17.36600 (217, 1)
260.0 /	18.78907 (116, 2)	17.20256 (164, 2)	17.55227 (315, 2)	15.93398 (315, 2)	12.44564 (315, 2)
250.0 /	25.14382 (164, 2)	25.38268 (164, 2)	20.81350 (164, 2)	15.68008 (280, 2)	15.73572 (351, 2)
240.0 /	22.44219 (132, 2)	25.49288 (303, 2)	23.42304 (303, 2)	17.72426 (303, 2)	15.38860 (283, 2)
230.0 /	23.72035 (241, 2)	27.52023 (250, 2)	26.65833 (250, 2)	20.85205 (250, 2)	15.18969C(347, 1)
220.0 /	15.41196 (192, 2)	18.19007 (250, 2)	18.29517 (2, 2)	16.10800 (14, 1)	18.41700 (14, 1)
210.0 /	16.05102 (195, 2)	17.00591 (195, 2)	14.38955 (195, 2)	10.78416 (318, 2)	11.25958 (13, 3)
200.0 /	16.74519 (342, 2)	20.47212 (342, 2)	19.42048 (342, 2)	14.92670 (342, 2)	11.52075C(338, 2)
190.0 /	19.99186 (342, 2)	23.63335 (342, 2)	21.87003 (342, 2)	16.48797 (342, 2)	13.94138 (209, 3)
180.0 /	18.24677 (131, 2)	17.17225 (131, 2)	15.35655 (342, 2)	11.35827 (342, 2)	9.27755 (21, 1)
170.0 /	15.11667 (61, 2)	17.20813 (61, 2)	15.54484 (61, 2)	11.92982 (229, 2)	10.52272 (229, 2)
160.0 /	15.97333 (61, 2)	17.31853 (61, 2)	15.05114 (61, 2)	12.38221 (192, 2)	13.07509 (19, 2)
150.0 /	15.74715 (229, 2)	15.04107 (229, 2)	14.61571C(273, 2)	12.68714C(273, 2)	10.41787 (202, 3)
140.0 /	13.16597 (229, 2)	13.06008 (229, 2)	11.24561 (115, 2)	11.95714C(189, 3)	10.80116C(189, 3)
130.0 /	10.29630 (245, 2)	13.83625 (245, 2)	14.28799 (245, 2)	11.79524 (245, 2)	9.95952C(155, 3)
120.0 /	13.96980 (226, 2)	12.20422 (77, 2)	13.02699 (224, 2)	13.40159 (207, 3)	13.02069 (207, 3)
110.0 /	21.80822 (226, 2)	18.69696 (226, 2)	14.28283 (292, 2)	11.18860 (292, 2)	10.93223C(146, 3)
100.0 /	21.23938 (226, 2)	19.80662 (226, 2)	15.70389 (226, 2)	11.41414C(154, 2)	9.25706 (176, 3)
90.0 /	25.41708C(154, 2)	26.67997C(154, 2)	22.64909C(55, 2)	18.46940C(55, 2)	14.06537 (177, 3)
80.0 /	21.62826 (188, 2)	23.83860C(290, 2)	21.85490C(290, 2)	16.43014C(290, 2)	11.50897 (135, 2)
70.0 /	30.40281C(290, 2)	32.89891C(290, 2)	28.61623C(290, 2)	21.45629C(86, 2)	22.71115C(86, 2)
60.0 /	24.64824C(194, 2)	23.47291C(238, 2)	18.49677C(238, 2)	12.26047C(290, 2)	10.56663C(230, 2)
50.0 /	23.69091C(238, 2)	22.41230C(238, 2)	17.48334C(238, 2)	12.71615 (218, 2)	14.19033 (129, 3)
40.0 /	19.39041C(194, 2)	17.41722C(194, 2)	13.41683C(238, 2)	12.19857C(348, 3)	10.27466 (53, 2)
30.0 /	13.23652 (102, 2)	15.43472 (102, 2)	14.18316 (110, 2)	16.94194 (25, 2)	17.67162 (25, 2)
20.0 /	15.71415 (102, 2)	17.48243 (102, 2)	15.40901 (102, 2)	11.16607 (102, 2)	10.64797 (125, 1)
10.0 /	10.88539C(6, 2)	11.64820C(6, 2)	11.39493 (193, 2)	9.93180 (85, 2)	9.87714 (85, 2)
360.0 /	12.21956 (215, 2)	12.34917 (215, 2)	11.40714C(197, 3)	14.24563 (87, 3)	14.94438 (87, 3)

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HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 32.89891 AND OCCURRED AT (241.0, 70.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	8.64252C(302, 1)	7.21686 (66, 1)	5.87561 (66, 1)	4.45093 (66, 1)	1.57033 (237, 1)
340.0 /	8.48831 (18, 2)	6.72234 (18, 2)	5.01904C(230, 1)	5.17809C(192, 3)	2.09377C(192, 3)
330.0 /	7.55314 (124, 1)	7.17460 (124, 1)	6.37046 (124, 1)	5.39895 (124, 1)	1.65669 (124, 1)
320.0 /	11.18962 (18, 1)	9.06841 (18, 1)	6.84761 (18, 1)	4.89060 (18, 1)	1.73818C(123, 1)
310.0 /	12.20744 (302, 2)	9.95167 (366, 3)	8.04005 (366, 3)	6.34820 (293, 1)	2.29358 (293, 1)
300.0 /	15.35927 (44, 1)	12.43620 (44, 1)	10.45123C(226, 1)	8.43801C(112, 1)	2.53054 (126, 3)
290.0 /	9.74533 (215, 1)	11.27241 (215, 1)	11.30875 (215, 1)	10.31182 (215, 1)	3.39593C(64, 1)
280.0 /	18.43232C(203, 1)	17.05993C(203, 1)	14.04267C(203, 1)	10.73865C(203, 1)	2.47225 (213, 1)
270.0 /	17.12658 (217, 1)	14.37586 (217, 1)	11.10601 (217, 1)	8.06917 (217, 1)	2.63786 (303, 3)
260.0 /	10.45990 (337, 2)	9.88644C(165, 1)	10.47206C(165, 1)	9.90768C(165, 1)	3.67537C(304, 1)
250.0 /	14.55247 (351, 2)	13.00620 (351, 3)	13.68274 (351, 3)	12.91530 (351, 3)	4.03390 (351, 3)
240.0 /	14.77447C(347, 1)	13.81915C(347, 1)	11.53158C(347, 1)	9.32807C(165, 1)	3.60104C(165, 1)
230.0 /	14.70428C(347, 1)	12.03228C(347, 1)	9.09138C(347, 1)	8.99889C(305, 1)	3.28870C(305, 1)
220.0 /	17.07740 (14, 1)	13.49422 (14, 1)	10.01057 (14, 1)	7.70485 (285, 3)	2.09376C(190, 1)

210.0 /	10.41074 (13, 3)	9.23617 (307, 3)	7.59972 (307, 3)	5.80901 (307, 3)	1.31193C(191, 1)
200.0 /	9.49775C(338, 2)	6.96365C(338, 2)	4.91897C(338, 2)	3.91006 (354, 3)	1.78918 (354, 3)
190.0 /	11.85132 (209, 3)	8.96862 (209, 3)	6.47995 (209, 3)	4.45181 (209, 3)	1.90750 (3, 3)
180.0 /	8.54219 (21, 1)	6.73433 (21, 1)	5.00660 (21, 1)	4.59442 (334, 1)	1.76178 (283, 1)
170.0 /	8.46753 (229, 2)	6.12553 (229, 2)	4.28503 (229, 2)	4.58205C(103, 3)	1.75295C(103, 3)
160.0 /	12.06065 (19, 2)	9.52656 (19, 2)	7.09444 (19, 2)	5.01469 (19, 2)	1.73818C(309, 3)
150.0 /	9.37467C(219, 3)	8.94875C(56, 3)	8.39405C(56, 3)	7.38763C(56, 3)	2.53508C(4, 3)
140.0 /	9.79867 (67, 1)	7.70355 (253, 1)	6.54787 (253, 1)	5.38270C(222, 3)	1.80466C(247, 3)
130.0 /	10.53691C(155, 3)	10.32955C(155, 3)	9.29534C(155, 3)	8.01624C(253, 3)	2.47211C(253, 3)
120.0 /	12.10190C(224, 3)	10.77143C(224, 3)	8.66059C(224, 3)	7.97450C(254, 1)	2.53384C(254, 1)
110.0 /	10.57912C(146, 3)	8.67086C(146, 3)	6.59538C(146, 3)	4.74186C(146, 3)	1.73777 (86, 1)
100.0 /	9.60141 (176, 3)	8.44511 (176, 3)	6.71371 (176, 3)	5.43998C(255, 3)	1.85048C(255, 3)
90.0 /	12.49584 (177, 3)	9.60753 (177, 3)	8.36931C(231, 1)	7.39852C(231, 1)	2.10861C(231, 1)
80.0 /	7.85935 (135, 2)	5.80888 (231, 3)	5.01905C(255, 1)	4.09958 (231, 3)	1.58125C(5, 3)
70.0 /	20.39849C(86, 2)	15.92349C(86, 2)	11.77237C(86, 2)	8.27700C(86, 2)	1.53677 (289, 3)
60.0 /	8.54713C(230, 2)	6.17521C(230, 2)	5.94086 (248, 3)	5.42096 (248, 3)	1.84975C(7, 1)
50.0 /	14.71831 (129, 3)	12.96652 (129, 3)	10.34258 (129, 3)	7.71072 (129, 3)	2.55424 (225, 3)
40.0 /	9.45661 (125, 3)	8.57276 (125, 3)	6.93337 (125, 3)	5.20777 (125, 3)	1.75296C(226, 1)
30.0 /	15.68785 (25, 2)	12.09383 (25, 2)	8.82495 (25, 2)	6.11566 (25, 2)	1.41018 (113, 3)
20.0 /	10.13227 (125, 1)	8.27330 (125, 1)	6.90558 (85, 3)	5.57869 (85, 3)	1.30707 (24, 3)
10.0 /	10.13552 (65, 3)	8.93981 (65, 3)	7.12306 (65, 3)	5.29716 (65, 3)	1.42908 (85, 3)
360.0 /	13.28309 (87, 3)	10.25930 (87, 3)	7.72010 (114, 1)	5.78062 (114, 1)	1.48988C(111, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.56546 AND OCCURRED AT (185.0, 60.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	9.75651 (103, 2)	9.55943 (103, 2)	10.45943 (202, 2)	7.76582 (200, 1)	8.67048 (105, 2)
340.0 /	11.49409 (84, 2)	12.70943 (84, 2)	11.24793 (84, 2)	9.50115C(140, 3)	8.48875 (289, 2)
330.0 /	12.57649 (84, 2)	13.79562 (84, 2)	12.14138 (84, 2)	8.98459 (210, 2)	7.19234 (356, 2)
320.0 /	16.37674 (292, 2)	18.63610 (292, 2)	16.59408 (210, 2)	12.65045 (292, 2)	10.69366 (57, 2)
310.0 /	18.30052 (158, 2)	21.48613 (210, 2)	18.70009 (143, 2)	14.74367 (143, 2)	11.76957 (57, 3)
300.0 /	19.69286 (158, 2)	18.96339 (210, 2)	14.74595 (210, 2)	13.73839 (44, 1)	16.16450 (44, 1)
290.0 /	14.62361 (158, 2)	14.30357 (212, 2)	12.46586 (159, 2)	9.48653 (217, 2)	9.06918 (274, 2)
280.0 /	14.43204 (139, 2)	15.74450 (139, 2)	15.76698 (167, 2)	13.39054C(51, 2)	12.78467 (213, 1)
270.0 /	13.70587 (146, 2)	14.26835 (139, 2)	16.33021 (49, 2)	15.10440 (49, 2)	13.59784 (160, 2)
260.0 /	17.12248 (164, 2)	16.50559 (116, 2)	13.98143 (164, 2)	12.29581 (306, 2)	11.35968 (337, 2)
250.0 /	19.40535 (116, 2)	17.08915 (132, 2)	18.12423 (280, 2)	14.27005 (164, 2)	14.21230 (274, 1)
240.0 /	22.14820 (303, 2)	23.99178 (250, 2)	22.57022 (250, 2)	17.25708 (250, 2)	13.90720 (15, 2)
230.0 /	22.02220 (250, 2)	24.29770 (241, 2)	20.60095 (241, 2)	18.33929C(338, 2)	14.87070 (250, 2)
220.0 /	15.08613 (241, 2)	16.17405 (2, 2)	17.35881 (250, 2)	15.83894 (2, 2)	12.03556 (2, 2)
210.0 /	11.85822 (235, 2)	11.72560 (190, 2)	11.69341 (190, 2)	10.62133 (130, 2)	10.08543 (318, 2)
200.0 /	12.52352 (131, 2)	15.34269 (193, 2)	14.67376 (193, 2)	12.40938C(338, 2)	10.52615 (342, 2)
190.0 /	19.90085 (131, 2)	18.73804 (131, 2)	14.62880 (131, 2)	14.60375 (209, 3)	11.47100 (342, 2)
180.0 /	14.81451 (342, 2)	16.99065 (342, 2)	13.38248 (131, 2)	10.80733 (31, 2)	8.72744 (31, 2)
170.0 /	11.42160 (221, 2)	13.48966 (31, 2)	12.53528 (31, 2)	11.53370 (61, 2)	9.30787 (151, 1)
160.0 /	13.65211 (229, 2)	14.29741 (192, 2)	14.86649 (192, 2)	11.57875 (19, 2)	9.40980C(73, 3)
150.0 /	11.69289 (221, 2)	12.85207C(273, 2)	13.23050C(320, 3)	12.38113C(320, 3)	9.90313C(219, 3)
140.0 /	9.94199 (221, 2)	11.56810 (115, 2)	11.13648C(189, 3)	10.22336C(201, 3)	10.64648 (67, 1)

130.0 /	9.62630 (188, 2)	9.85266 (314, 2)	9.29631 (228, 2)	8.93546C(155, 3)	9.86359 (11, 2)
120.0 /	9.76999 (203, 2)	11.58505 (226, 2)	12.61998 (77, 2)	11.61206 (224, 2)	11.62906C(224, 3)
110.0 /	11.90097 (292, 2)	14.79768 (292, 2)	13.56706 (226, 2)	11.06231 (224, 2)	8.69928 (53, 3)
100.0 /	15.49194C(154, 2)	17.41557C(154, 2)	15.56071C(154, 2)	10.40885 (226, 2)	8.92177C(245, 3)
90.0 /	19.48846C(55, 2)	23.39211C(55, 2)	22.63571C(154, 2)	15.98635C(154, 2)	13.94043C(55, 2)
80.0 /	20.61910C(290, 2)	20.98838C(55, 2)	19.20747 (135, 2)	15.67911 (135, 2)	11.43126C(290, 2)
70.0 /	22.00857 (225, 2)	22.53872 (309, 2)	19.32838C(288, 2)	20.62307C(290, 2)	17.01296 (178, 1)
60.0 /	24.56546C(238, 2)	22.45590C(194, 2)	18.07069C(290, 2)	12.17719C(238, 2)	9.00635 (357, 2)
50.0 /	23.32821C(194, 2)	20.82164C(194, 2)	16.36349 (218, 2)	11.35572C(238, 2)	12.15141 (233, 1)
40.0 /	17.92958C(238, 2)	17.09070C(238, 2)	13.30833C(348, 3)	9.62928 (125, 2)	9.57877C(348, 3)
30.0 /	12.76856 (50, 2)	14.66831 (50, 2)	14.12875 (102, 2)	11.17918 (110, 2)	12.52990 (18, 3)
20.0 /	12.21460 (119, 2)	13.69822 (50, 2)	12.56557 (50, 2)	10.46220 (144, 2)	10.12542 (25, 2)
10.0 /	10.06876 (121, 2)	10.87977 (193, 2)	9.89670C(6, 2)	9.44575 (193, 2)	9.74951 (65, 3)
360.0 /	11.71824 (142, 2)	11.85050 (142, 2)	10.23486 (87, 3)	10.45592C(197, 3)	9.85195 (114, 1)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.56546 AND OCCURRED AT (185.0, 60.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	8.17250 (105, 2)	7.11103C(302, 1)	5.41728C(302, 1)	3.89689C(302, 1)	1.23072C(99, 3)
340.0 /	7.80596C(217, 3)	6.42744 (228, 2)	4.99820 (18, 2)	4.04203C(230, 1)	.98443 (142, 1)
330.0 /	7.37438 (83, 1)	5.89222 (83, 1)	4.40083 (83, 1)	3.88526 (126, 1)	1.57042 (126, 1)
320.0 /	8.43352 (100, 1)	6.97635 (100, 1)	5.64319 (65, 1)	4.77777C(246, 3)	1.50449C(246, 3)
310.0 /	10.97573 (366, 3)	7.77157 (57, 3)	6.80596 (65, 1)	6.02995 (366, 3)	1.69003 (198, 3)
300.0 /	14.01406C(104, 1)	12.36423C(226, 1)	9.46419C(204, 1)	8.14628C(226, 1)	2.45552C(112, 1)
290.0 /	9.44309C(197, 3)	8.58101C(197, 3)	7.60097 (205, 1)	7.43090C(64, 1)	3.11733 (215, 1)
280.0 /	13.85789 (213, 1)	13.39371 (213, 1)	11.81835 (213, 1)	9.77312 (213, 1)	2.17027C(203, 1)
270.0 /	10.88208 (349, 2)	10.09724 (168, 1)	8.60261 (168, 1)	7.43656C(198, 1)	2.33057C(292, 1)
260.0 /	9.62410 (361, 3)	8.64263 (209, 1)	8.67970C(198, 1)	9.21501C(304, 1)	3.17202C(165, 1)
250.0 /	13.55069 (274, 1)	11.44887 (351, 2)	11.01664 (306, 3)	10.41898 (297, 1)	3.92749 (297, 1)
240.0 /	12.87105 (15, 2)	12.18322 (313, 3)	10.81961 (313, 3)	8.92260C(347, 1)	3.02415 (315, 1)
230.0 /	11.52754 (16, 2)	9.93102C(193, 1)	8.82138C(305, 1)	7.96332 (281, 1)	3.27061C(279, 1)
220.0 /	10.39987C(73, 1)	10.23898 (285, 3)	9.30064 (285, 3)	7.03437 (14, 1)	2.09376C(241, 1)
210.0 /	9.96906 (307, 3)	8.20660 (13, 3)	6.07812 (13, 3)	4.54804C(189, 3)	1.31190C(140, 3)
200.0 /	8.27873 (16, 2)	6.58502 (16, 2)	4.91213 (16, 2)	3.89332 (270, 1)	1.72888 (276, 1)
190.0 /	8.16590 (12, 2)	6.49364 (12, 2)	4.82963 (12, 2)	3.95617 (3, 3)	1.44714 (335, 1)
180.0 /	7.58971 (329, 1)	5.98364 (329, 1)	4.90931 (312, 1)	4.47757C(146, 1)	1.73818C(146, 1)
170.0 /	7.50230 (151, 1)	5.62825 (151, 1)	4.20753C(103, 3)	3.46866C(136, 1)	1.54752C(343, 3)
160.0 /	8.91418C(25, 3)	7.34564C(25, 3)	5.60476C(25, 3)	4.47757C(309, 3)	1.59819C(76, 3)
150.0 /	9.07114 (67, 1)	7.52847C(219, 3)	6.59357C(76, 3)	5.34285C(76, 3)	2.17452C(56, 3)
140.0 /	8.72143C(189, 3)	7.69553 (67, 1)	6.06626 (136, 3)	5.11753 (253, 1)	1.58027C(338, 3)
130.0 /	8.96501 (11, 2)	8.75034C(253, 3)	8.75814C(253, 3)	7.80803C(155, 3)	1.99294C(155, 3)
120.0 /	11.10834 (207, 3)	8.36998 (207, 3)	8.20299C(254, 1)	6.49420C(224, 3)	2.42517C(115, 3)
110.0 /	8.56057 (101, 1)	7.40581 (108, 3)	6.06692 (108, 3)	4.62926 (108, 3)	1.27550 (36, 1)
100.0 /	8.06953 (97, 3)	7.52615 (97, 3)	6.53632C(288, 3)	5.30605C(288, 3)	1.47647 (174, 1)
90.0 /	9.88971C(55, 2)	8.63566C(231, 1)	7.10421C(194, 3)	5.72684C(194, 3)	1.85323C(224, 1)
80.0 /	7.49688C(290, 2)	5.63663C(255, 1)	5.00097 (231, 3)	4.04204C(255, 1)	1.00894 (231, 3)
70.0 /	15.69463 (178, 1)	12.35609 (178, 1)	9.14776 (178, 1)	6.41719 (178, 1)	1.33902C(86, 2)
60.0 /	7.34382 (175, 1)	6.10354 (175, 1)	5.44179C(217, 3)	4.37609C(217, 3)	1.63827 (248, 3)

50.0 /	12.11926 (233, 1)	10.31778 (233, 1)	8.37580 (56, 1)	6.62279 (56, 1)	2.10762 (109, 3)
40.0 /	9.42469 (53, 2)	7.37132 (53, 2)	5.42187 (53, 2)	4.63670C(105, 1)	1.73818C(290, 1)
30.0 /	11.59855 (18, 3)	9.15464 (18, 3)	6.78861 (18, 3)	4.77055 (18, 3)	.91853 (25, 2)
20.0 /	9.28460 (25, 2)	7.91862 (85, 3)	6.28455 (125, 1)	4.84171 (100, 3)	1.24683 (100, 3)
10.0 /	9.53229 (27, 1)	8.29571 (27, 1)	6.58213 (27, 1)	5.25699 (85, 3)	.99360 (180, 3)
360.0 /	10.59905 (114, 1)	9.57760 (114, 1)	7.52624 (87, 3)	5.38817 (341, 1)	1.30784 (341, 1)

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HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 12.81872 AND OCCURRED AT (555.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	4.26318C(215, 1)	4.41818C(215, 1)	3.91941C(167, 1)	3.36570 (87, 1)	3.50151 (87, 1)
340.0 /	5.15723C(289, 1)	6.38239C(289, 1)	6.22201C(289, 1)	4.93834C(289, 1)	3.94113 (58, 1)
330.0 /	5.57658C(208, 1)	6.40495C(84, 1)	5.99995C(84, 1)	4.59608C(84, 1)	3.51203C(166, 1)
320.0 /	7.27858C(292, 1)	8.28399C(292, 1)	7.53435C(292, 1)	6.43222 (57, 1)	5.42564 (57, 1)
310.0 /	8.99641 (210, 1)	9.61014 (210, 1)	9.24018C(302, 1)	8.25491 (57, 1)	7.54017 (57, 1)
300.0 /	7.99688 (210, 1)	8.57313 (210, 1)	9.90889C(302, 1)	10.88728C(44, 1)	12.81872C(44, 1)
290.0 /	5.09758 (159, 1)	5.44898C(212, 1)	5.89555C(212, 1)	5.05473C(197, 1)	5.05418C(197, 1)
280.0 /	6.07705C(147, 1)	7.11799C(147, 1)	7.81407C(197, 1)	7.62452C(197, 1)	7.65421 (43, 1)
270.0 /	5.67282C(147, 1)	7.01379 (159, 1)	7.69868 (159, 1)	7.53096 (160, 1)	8.05731 (168, 1)
260.0 /	8.35070C(116, 1)	7.33606C(116, 1)	6.69723C(315, 1)	6.50676C(360, 1)	7.05907C(360, 1)
250.0 /	9.32825 (164, 1)	10.13531 (164, 1)	9.09547 (164, 1)	7.66930 (280, 1)	9.87663 (350, 1)
240.0 /	8.30427C(241, 1)	8.96599C(250, 1)	9.87547C(250, 1)	9.74280C(250, 1)	10.51926 (15, 1)
230.0 /	10.99400C(241, 1)	11.34955C(241, 1)	9.63671C(241, 1)	7.93039C(250, 1)	8.36053 (14, 1)
220.0 /	9.23126C(241, 1)	9.31573C(241, 1)	7.69855C(241, 1)	8.74345 (14, 1)	9.90858 (14, 1)
210.0 /	5.58351C(195, 1)	5.92076C(195, 1)	5.02470C(195, 1)	6.39988 (20, 1)	7.21031 (20, 1)
200.0 /	6.10067C(342, 1)	7.55462C(342, 1)	7.44843C(342, 1)	6.18846C(342, 1)	5.12992 (12, 1)
190.0 /	7.26988C(342, 1)	8.59504C(342, 1)	7.96521C(342, 1)	6.09661C(342, 1)	5.12454 (12, 1)
180.0 /	6.34670C(131, 1)	6.28826C(342, 1)	5.91801C(342, 1)	5.13915 (328, 1)	5.71753 (328, 1)
170.0 /	5.75873C(61, 1)	6.55550C(61, 1)	7.39894C(229, 1)	7.90812C(229, 1)	7.36234C(229, 1)
160.0 /	7.14426C(229, 1)	7.90729C(229, 1)	7.27176C(229, 1)	5.58589C(229, 1)	6.02305 (19, 1)
150.0 /	7.21774C(229, 1)	7.08869C(229, 1)	6.49421C(115, 1)	7.95967 (67, 1)	8.63583 (67, 1)
140.0 /	5.88649C(229, 1)	6.09792C(229, 1)	6.21115C(201, 1)	7.20162 (67, 1)	7.50682 (67, 1)
130.0 /	4.57622C(245, 1)	6.14957C(245, 1)	6.35033C(245, 1)	5.31182C(221, 1)	5.04921 (59, 1)
120.0 /	5.61742C(226, 1)	5.63205C(224, 1)	7.55032C(224, 1)	8.24944C(224, 1)	7.85873C(224, 1)
110.0 /	8.74582C(226, 1)	7.65665C(226, 1)	8.08631C(224, 1)	7.81344C(224, 1)	6.95234C(224, 1)
100.0 /	8.51429C(226, 1)	8.06789C(226, 1)	7.17948C(225, 1)	6.31664C(225, 1)	5.84070 (272, 1)
90.0 /	9.36421C(154, 1)	11.16201C(225, 1)	11.49155C(225, 1)	9.88060C(55, 1)	8.14310C(55, 1)
80.0 /	9.64917C(225, 1)	10.75726C(225, 1)	9.93662C(225, 1)	7.57406C(225, 1)	5.42328C(55, 1)
70.0 /	10.13427C(290, 1)	10.96630C(290, 1)	9.53874C(290, 1)	7.35239C(86, 1)	7.78524C(86, 1)
60.0 /	9.05043C(238, 1)	8.71505C(218, 1)	7.47260C(218, 1)	5.33792C(218, 1)	4.84716 (181, 1)
50.0 /	8.72823C(238, 1)	8.25716C(238, 1)	7.27266C(218, 1)	5.93278C(289, 1)	6.36443C(233, 1)
40.0 /	6.60563C(238, 1)	6.29657C(238, 1)	4.94304C(238, 1)	6.44794 (125, 1)	6.87446 (125, 1)
30.0 /	5.42657C(102, 1)	6.76350C(102, 1)	6.51349C(102, 1)	6.91198C(25, 1)	7.41385C(25, 1)
20.0 /	6.12130C(102, 1)	7.18838C(102, 1)	6.62107C(102, 1)	4.97430C(102, 1)	5.20206 (88, 1)
10.0 /	4.02750C(121, 1)	4.14468C(193, 1)	4.68843C(85, 1)	5.52560C(85, 1)	5.60583C(85, 1)
360.0 /	4.25028C(215, 1)	4.38432C(121, 1)	4.70304C(197, 1)	6.22991 (87, 1)	6.51109 (87, 1)

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HIGH
24-HR

SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 12.81872 AND OCCURRED AT (555.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	3.60809 (66, 1)	3.16691 (66, 1)	2.51543 (66, 1)	1.86983 (66, 1)	.57103C(237, 1)
340.0 /	3.61745 (58, 1)	2.83242 (58, 1)	2.08596 (58, 1)	1.55343C(192, 1)	.62813C(192, 1)
330.0 /	2.70854C(166, 1)	2.39153 (124, 1)	2.12349 (124, 1)	1.79965 (124, 1)	.55223 (124, 1)
320.0 /	4.59683 (65, 1)	3.84568 (65, 1)	3.00149 (65, 1)	2.47282C(110, 1)	.74549C(110, 1)
310.0 /	6.11707 (57, 1)	4.65388C(366, 1)	3.54912C(366, 1)	2.55303C(366, 1)	.79143 (293, 1)
300.0 /	12.17729C(44, 1)	9.85017C(44, 1)	7.47346C(44, 1)	5.42136C(44, 1)	1.14311C(44, 1)
290.0 /	4.59384C(197, 1)	4.80801C(215, 1)	4.57699C(215, 1)	4.02860C(215, 1)	1.14602C(215, 1)
280.0 /	7.31665 (43, 1)	6.20974C(336, 1)	4.98622C(336, 1)	4.32911C(215, 1)	1.31442C(215, 1)
270.0 /	7.88338 (168, 1)	6.75867 (168, 1)	5.30082 (168, 1)	4.22572 (303, 1)	1.35686 (303, 1)
260.0 /	6.73750C(360, 1)	5.79646C(360, 1)	5.09491C(304, 1)	4.74149C(304, 1)	1.49430C(304, 1)
250.0 /	10.50494 (350, 1)	9.69204C(351, 1)	8.87391C(351, 1)	7.57835C(351, 1)	1.96826C(351, 1)
240.0 /	9.71388 (15, 1)	7.64815 (15, 1)	5.65468 (15, 1)	4.46150 (268, 1)	1.33071C(165, 1)
230.0 /	7.73386 (12, 1)	6.13540 (12, 1)	4.56180 (12, 1)	4.14962C(305, 1)	1.41215C(305, 1)
220.0 /	9.11728 (14, 1)	7.14926 (14, 1)	5.26840 (14, 1)	3.67691 (14, 1)	.83191 (285, 1)
210.0 /	6.62205 (20, 1)	5.19690 (20, 1)	3.83937 (20, 1)	2.68886 (20, 1)	.59014 (32, 1)
200.0 /	4.75346 (12, 1)	3.74993 (12, 1)	2.77604 (12, 1)	2.08715C(238, 1)	.75334C(354, 1)
190.0 /	4.76354 (12, 1)	3.76185 (12, 1)	2.78199 (12, 1)	2.52005C(3, 1)	1.10158C(3, 1)
180.0 /	5.20505 (328, 1)	4.05757 (328, 1)	2.98710 (328, 1)	2.32485 (317, 1)	.70498C(344, 1)
170.0 /	6.13269C(229, 1)	4.54491C(229, 1)	3.23621C(229, 1)	2.19948C(229, 1)	.70015C(333, 1)
160.0 /	5.55553 (19, 1)	4.38570 (19, 1)	3.26292 (19, 1)	2.30370 (19, 1)	.57939C(309, 1)
150.0 /	7.77947 (67, 1)	6.03358 (67, 1)	4.42785 (67, 1)	3.08594 (67, 1)	.84580C(4, 1)
140.0 /	6.70567 (67, 1)	5.24646 (67, 1)	3.93288C(28, 1)	3.29632C(28, 1)	.91734C(28, 1)
130.0 /	4.95066C(253, 1)	4.94620C(253, 1)	4.58603C(253, 1)	3.98078C(253, 1)	1.11250C(253, 1)
120.0 /	6.84963C(224, 1)	5.40423C(224, 1)	4.09198C(254, 1)	3.58557C(254, 1)	.97750C(254, 1)
110.0 /	5.89432C(224, 1)	4.63814C(224, 1)	3.47980C(224, 1)	2.51801 (101, 1)	.66201C(86, 1)
100.0 /	5.74124 (272, 1)	4.82848 (272, 1)	3.74009 (272, 1)	2.72318 (272, 1)	.65363C(174, 1)
90.0 /	6.47509C(55, 1)	4.88148 (177, 1)	3.55357C(55, 1)	2.81862C(231, 1)	.68813C(231, 1)
80.0 /	4.11750C(231, 1)	3.40763C(255, 1)	2.77976C(255, 1)	2.11300C(255, 1)	.61798C(5, 1)
70.0 /	6.98511C(86, 1)	5.44252C(86, 1)	4.01563C(86, 1)	2.81721C(86, 1)	.65308C(289, 1)
60.0 /	4.08759 (181, 1)	3.12223 (181, 1)	2.77049C(248, 1)	2.40582C(248, 1)	.67734C(248, 1)
50.0 /	6.19369C(233, 1)	5.27675C(233, 1)	4.15148 (181, 1)	3.56100 (181, 1)	1.14823C(225, 1)
40.0 /	6.38363 (125, 1)	5.20399 (125, 1)	3.96023 (125, 1)	2.84801 (125, 1)	.58813C(290, 1)
30.0 /	6.73195C(25, 1)	5.29123C(25, 1)	3.90231C(25, 1)	2.72040C(25, 1)	.54761 (113, 1)
20.0 /	4.73420 (88, 1)	3.68834 (88, 1)	3.01457C(25, 1)	2.49417C(25, 1)	.62056C(25, 1)
10.0 /	5.28675C(85, 1)	4.63927C(85, 1)	3.88197C(85, 1)	3.08811C(85, 1)	.69686C(85, 1)
360.0 /	5.76984 (87, 1)	4.44341 (87, 1)	3.25186 (87, 1)	2.26447 (87, 1)	.46585C(111, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 11.28514 AND OCCURRED AT (315.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	4.06765C(167, 1)	4.37486C(167, 1)	3.70115C(215, 1)	3.19930C(202, 1)	3.48708 (66, 1)
340.0 /	4.70526C(84, 1)	5.49546C(84, 1)	5.07271C(84, 1)	3.82638C(84, 1)	3.57421C(289, 1)
330.0 /	5.40123C(84, 1)	5.35289C(208, 1)	4.64163C(356, 1)	4.15516C(166, 1)	3.24446C(84, 1)
320.0 /	6.83348 (210, 1)	7.18462 (210, 1)	6.55566 (57, 1)	5.67562C(292, 1)	4.91352 (65, 1)
310.0 /	6.99503C(292, 1)	7.93556C(292, 1)	8.76925 (210, 1)	8.22567C(302, 1)	6.34975C(302, 1)
300.0 /	6.95461 (158, 1)	7.96081C(302, 1)	8.01985C(143, 1)	9.79990C(302, 1)	9.62089C(204, 1)
290.0 /	4.90405C(246, 1)	5.16439 (159, 1)	4.77748 (160, 1)	4.97632C(212, 1)	4.63550C(169, 1)
280.0 /	5.58263C(167, 1)	6.83902C(197, 1)	7.25856 (161, 1)	7.16914 (161, 1)	7.09237C(336, 1)
270.0 /	5.55760 (207, 1)	6.47707C(147, 1)	6.91891 (160, 1)	7.25198 (168, 1)	7.08425 (160, 1)
260.0 /	5.78808 (164, 1)	6.22144C(133, 1)	5.70393C(133, 1)	6.16420C(315, 1)	5.39556 (17, 1)
250.0 /	8.62460C(116, 1)	7.50735C(116, 1)	7.51659C(153, 1)	7.65123 (350, 1)	8.71497C(351, 1)
240.0 /	8.18069 (132, 1)	8.83148 (164, 1)	8.43543C(283, 1)	9.26407 (15, 1)	8.84450C(250, 1)
230.0 /	7.66766C(250, 1)	9.63475C(250, 1)	9.52684C(250, 1)	7.47545 (14, 1)	8.29723 (12, 1)
220.0 /	6.16609C(192, 1)	6.55228C(250, 1)	6.57899C(250, 1)	6.40336 (284, 1)	6.87475 (20, 1)
210.0 /	5.50978C(235, 1)	5.56377C(235, 1)	4.69875 (130, 1)	5.90064 (13, 1)	6.69495 (13, 1)
200.0 /	5.25269C(235, 1)	6.10989C(235, 1)	5.70606C(235, 1)	4.82587C(338, 1)	4.85813C(342, 1)
190.0 /	6.92221C(131, 1)	6.51784C(131, 1)	5.08851C(131, 1)	4.86793 (209, 1)	4.73712 (328, 1)
180.0 /	5.40143C(342, 1)	5.97296C(131, 1)	4.93565C(219, 1)	5.00980 (152, 1)	4.55844 (152, 1)
170.0 /	5.07627C(221, 1)	6.18297C(229, 1)	5.92265C(61, 1)	5.46525 (151, 1)	5.15760 (151, 1)
160.0 /	6.08519C(61, 1)	6.59847C(61, 1)	6.01154C(192, 1)	5.33005 (19, 1)	4.11421 (151, 1)
150.0 /	5.20436C(221, 1)	5.80784C(115, 1)	5.82734C(229, 1)	6.18039C(115, 1)	5.83447 (60, 1)
140.0 /	4.74157C(221, 1)	5.39472C(221, 1)	5.67373C(229, 1)	5.72755C(201, 1)	5.11770 (11, 1)
130.0 /	4.00251C(155, 1)	5.16837C(221, 1)	5.68331C(221, 1)	5.24257C(245, 1)	5.03102 (11, 1)
120.0 /	3.97743C(77, 1)	5.42410C(77, 1)	5.60888C(77, 1)	6.00502 (96, 1)	6.07671 (96, 1)
110.0 /	5.28933C(292, 1)	6.85803C(224, 1)	6.34822C(292, 1)	4.97361C(292, 1)	5.63442 (101, 1)
100.0 /	5.71703C(154, 1)	6.70034C(245, 1)	6.72598C(226, 1)	5.83600C(245, 1)	5.37231 (176, 1)
90.0 /	8.66274C(55, 1)	11.01428C(55, 1)	11.28514C(55, 1)	9.43564C(225, 1)	7.40982 (177, 1)
80.0 /	8.09596C(309, 1)	8.81266C(309, 1)	8.62785C(135, 1)	7.11271C(135, 1)	5.34027C(225, 1)
70.0 /	9.82148C(225, 1)	10.01721C(309, 1)	8.38181C(309, 1)	6.87436C(290, 1)	6.29802 (175, 1)
60.0 /	8.84255C(225, 1)	8.64792C(238, 1)	6.81460C(238, 1)	5.26848 (181, 1)	4.10971C(230, 1)
50.0 /	7.77607C(194, 1)	7.71574C(218, 1)	6.44123C(238, 1)	5.69576C(233, 1)	5.39190 (129, 1)
40.0 /	6.46347C(194, 1)	5.80574C(194, 1)	4.90023 (125, 1)	5.00690C(25, 1)	5.07872C(25, 1)
30.0 /	4.64311C(50, 1)	5.86903C(110, 1)	5.80285C(110, 1)	5.99626 (124, 1)	6.33581 (18, 1)
20.0 /	4.28702C(50, 1)	4.98117C(50, 1)	4.76454C(200, 1)	4.86484 (340, 1)	5.05628 (66, 1)
10.0 /	3.62846C(6, 1)	4.10479C(121, 1)	4.34093C(193, 1)	4.86080 (340, 1)	4.98681 (340, 1)
360.0 /	4.07606C(142, 1)	4.29536C(215, 1)	4.50398 (87, 1)	5.43333C(197, 1)	5.19081C(197, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1984 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 11.28514 AND OCCURRED AT (315.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	3.25271 (87, 1)	2.67731 (87, 1)	2.04730 (87, 1)	1.61548 (126, 1)	.43107 (126, 1)
340.0 /	2.97139C(228, 1)	2.44855C(228, 1)	1.86825C(228, 1)	1.45546 (58, 1)	.34389C(142, 1)

330.0 /	2.56571C(83, 1)	2.04986C(83, 1)	1.53093C(83, 1)	1.29509 (126, 1)	.52347 (126, 1)
320.0 /	4.13649 (57, 1)	3.09641 (100, 1)	2.67674C(110, 1)	2.22593 (65, 1)	.52145C(123, 1)
310.0 /	5.70018C(366, 1)	4.41335 (57, 1)	3.08285 (57, 1)	2.36872 (293, 1)	.61477C(198, 1)
300.0 /	9.19763C(204, 1)	7.63229C(204, 1)	5.87255C(204, 1)	4.29289C(204, 1)	.89688C(204, 1)
290.0 /	4.54191C(215, 1)	3.91859 (205, 1)	3.69151 (205, 1)	3.21755 (205, 1)	1.09757C(64, 1)
280.0 /	7.09749C(336, 1)	5.98939 (43, 1)	4.76483C(215, 1)	3.75978C(336, 1)	.82408 (213, 1)
270.0 /	6.35503C(217, 1)	5.29740C(217, 1)	4.35355 (303, 1)	3.89292 (168, 1)	.85004C(198, 1)
260.0 /	5.27608 (17, 1)	5.01103C(304, 1)	4.72564C(360, 1)	3.68350C(360, 1)	1.08703C(165, 1)
250.0 /	9.67894C(351, 1)	9.58463 (350, 1)	7.87261 (350, 1)	6.02727 (350, 1)	1.43708 (297, 1)
240.0 /	7.85809 (262, 1)	6.53606 (262, 1)	5.19526 (268, 1)	3.98538C(8, 1)	1.15206C(315, 1)
230.0 /	7.58762 (14, 1)	5.85654 (14, 1)	4.24902 (14, 1)	3.64000 (281, 1)	1.39157 (281, 1)
220.0 /	6.49112 (20, 1)	5.27810 (20, 1)	4.34912 (285, 1)	3.59790 (285, 1)	.76949C(283, 1)
210.0 /	6.16417 (13, 1)	4.83573 (13, 1)	3.56489 (13, 1)	2.48960 (13, 1)	.58016 (286, 1)
200.0 /	4.10020 (326, 1)	3.35544 (326, 1)	2.73381C(238, 1)	1.94645 (12, 1)	.57629 (276, 1)
190.0 /	4.26295 (328, 1)	3.28050 (328, 1)	2.38512 (328, 1)	2.07783C(325, 1)	.58097C(325, 1)
180.0 /	3.80842 (152, 1)	3.12843 (311, 1)	2.82302 (311, 1)	2.29789 (311, 1)	.67168C(355, 1)
170.0 /	4.53692 (151, 1)	3.67845 (151, 1)	2.83163 (151, 1)	2.08035 (151, 1)	.47808C(103, 1)
160.0 /	4.05929C(51, 1)	3.59538C(249, 1)	2.93135C(249, 1)	2.21087C(249, 1)	.52676C(290, 1)
150.0 /	5.75321 (60, 1)	4.96073 (60, 1)	3.94183 (60, 1)	2.94239 (60, 1)	.68058C(56, 1)
140.0 /	4.98181C(28, 1)	4.52115C(28, 1)	3.88283 (67, 1)	2.72557 (67, 1)	.61762C(91, 1)
130.0 /	4.63730 (101, 1)	4.34841 (101, 1)	3.77191 (101, 1)	3.25732C(223, 1)	1.07944C(98, 1)
120.0 /	5.25925 (96, 1)	4.56008 (107, 1)	4.04750C(224, 1)	3.15783 (107, 1)	.79497C(54, 1)
110.0 /	5.39467 (101, 1)	4.44369 (101, 1)	3.43292 (101, 1)	2.47986C(224, 1)	.44383 (101, 1)
100.0 /	5.08557C(97, 1)	4.29653C(97, 1)	3.36512C(97, 1)	2.47932C(97, 1)	.63786C(255, 1)
90.0 /	6.43577 (177, 1)	4.85667C(55, 1)	3.54619C(30, 1)	2.73611C(30, 1)	.63582C(224, 1)
80.0 /	4.11512 (177, 1)	3.25774 (177, 1)	2.56921C(231, 1)	1.97431C(231, 1)	.43089C(231, 1)
70.0 /	5.62371 (175, 1)	4.34107 (175, 1)	3.18404 (175, 1)	2.23117 (175, 1)	.45143C(86, 1)
60.0 /	3.32411C(230, 1)	2.99494C(248, 1)	2.28515 (181, 1)	1.80948 (232, 1)	.61658C(7, 1)
50.0 /	5.31066 (129, 1)	4.58383 (181, 1)	4.13955C(233, 1)	3.05140C(233, 1)	1.01865 (181, 1)
40.0 /	4.41949C(25, 1)	3.38884 (18, 1)	2.49942 (18, 1)	1.76014 (232, 1)	.53537C(226, 1)
30.0 /	5.85076 (18, 1)	4.61022 (18, 1)	3.41572 (18, 1)	2.39867 (18, 1)	.49209 (125, 1)
20.0 /	4.50270 (66, 1)	3.59392C(85, 1)	2.97404C(85, 1)	2.31518C(85, 1)	.50262 (24, 1)
10.0 /	4.54901 (65, 1)	3.90556 (65, 1)	3.06540 (65, 1)	2.25581 (65, 1)	.40568 (65, 1)
360.0 /	4.37942C(197, 1)	3.27578C(197, 1)	2.70705C(110, 1)	2.10107C(110, 1)	.43595 (341, 1)

RUN ENDED ON 10-19-90 AT 14:37:19

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-42

ISC-ST MODEL RUN

FOR

1986 FOR INORGANIC WASTE TREATMENT SYSTEM STACK

AT EXHAUST GAS FLOW RATES OF 6,000 ACFM AND 1,000 ACFM

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1          ISCST - VERSION 3.4 (DATED 88348)

           IBM-PC VERSION (1.64)
           (C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
           SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
           RUN BEGAN ON 08-23-90 AT 19:49:04

1
                 *** IWT Case 1--1986                                        ***

         CALCULATE (CONCENTRATION=1,DEPOSITION=2)                      ISW(1) =   1
         RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)       ISW(2) =   4
         DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)              ISW(3) =   1
         TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                      ISW(4) =   0
         CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                 ISW(5) =   0
         LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)              ISW(6) =   1

         COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
         WITH THE FOLLOWING TIME PERIODS:
           HOURLY (YES=1,NO=0)                                         ISW(7) =   1
           2-HOUR (YES=1,NO=0)                                         ISW(8) =   0
           3-HOUR (YES=1,NO=0)                                         ISW(9) =   1
           4-HOUR (YES=1,NO=0)                                        ISW(10) =   0
           6-HOUR (YES=1,NO=0)                                        ISW(11) =   0
           8-HOUR (YES=1,NO=0)                                        ISW(12) =   1
           12-HOUR (YES=1,NO=0)                                       ISW(13) =   0
           24-HOUR (YES=1,NO=0)                                       ISW(14) =   1
         PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                          ISW(15) =   1

         PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
         SPECIFIED BY ISW(7) THROUGH ISW(14):
           DAILY TABLES (YES=1,NO=0)                                  ISW(16) =   0
           HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)               ISW(17) =   1
           MAXIMUM 50 TABLES (YES=1,NO=0)                             ISW(18) =   0
         METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)    ISW(19) =   1
         RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3) ISW(20) =   0
         WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)    ISW(21) =   1
         VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3) ISW(22) =   1
         SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)            ISW(23) =   0
         PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)        ISW(24) =   1
         PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)  ISW(25) =   2
         PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)        ISW(26) =   1
         CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)      ISW(27) =   1
         REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                      ISW(28) =   1
         TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)             ISW(29) =   2
         DEBUG OPTION CHOSEN (YES=1,NO=2)                             ISW(30) =   2
         ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)          ISW(31) =   0

         NUMBER OF INPUT SOURCES                                       NSOURC =   1
         NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                      NGROUP =   0
         TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)          IPERD =   0
         NUMBER OF X (RANGE) GRID VALUES                               NXPNTS =  10
         NUMBER OF Y (THETA) GRID VALUES                               NYPNTS =  36
         NUMBER OF DISCRETE RECEPTORS                                  NXWYPT =   0
         SOURCE EMISSION RATE UNITS CONVERSION FACTOR                      TK =.10000E+07
         HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED              ZR =  10.00  METERS
         LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA                      IMET =   9
         DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION           DECAY = .000000E+00
         SURFACE STATION NO.                                              ISS = 12842
```

```
YEAR OF SURFACE DATA                                        ISY = 86
UPPER AIR STATION NO.                                       IUS = 12842
YEAR OF UPPER AIR DATA                                      IUY = 86
ALLOCATED DATA STORAGE                                    LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN                MIMIT =  8613 WORDS
```

1 *** IWT Case 1--1986 ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

1 *** IWT Case 1--1986 ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

313.0,	407.0,	532.0,	720.0,	939.0,	1221.0,	1628.0,	2128.0,	2817.0,	6000.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

360.0,	10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,
100.0,	110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,
200.0,	210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,
300.0,	310.0,	320.0,	330.0,	340.0,	350.0,				

1

*** IWT Case 1--1986 ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	.10000E+01	.0	.0	.0	30.48	293.15	9.70	.61	.00	.00	.00

* CALM HOURS (=1) FOR DAY 1 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 2 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 3 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 5 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 12 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 13 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 14 *	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 15 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 20 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 21 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 22 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 24 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 25 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 26 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 28 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 29 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 30 *	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 31 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 33 *	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 38 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
* CALM HOURS (=1) FOR DAY 39 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 40 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 44 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 48 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 49 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 52 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 53 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 54 *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 56 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 57 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 59 *	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 60 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 61 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 62 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 64 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 65 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 67 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 70 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 73 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 74 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 76 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 83 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 86 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 87 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 90 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 91 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 92 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 93 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 94 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 96 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 97 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 98 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 101 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 102 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 103 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 104 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 108 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 113 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 114 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 115 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 117 *	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 119 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 121 *	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 123 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 127 *	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 128 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 129 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 132 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 137 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 142 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 143 *	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 145 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 150 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 153 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 154 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 158 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 159 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 160 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 161 *	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 162 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 164 *	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0

* CALM HOURS (=1) FOR DAY 165 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 168 *	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 171 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 172 *	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 173 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 175 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 176 *	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 177 *	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 178 *	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 179 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 180 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 181 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 188 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 189 *	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 190 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 194 *	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 195 *	1	1	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 196 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 197 *	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 198 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 199 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 200 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 204 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 205 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 206 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 207 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 209 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 210 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 211 *	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 213 *	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 219 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 220 *	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 225 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 230 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 231 *	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 235 *	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 239 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 241 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 244 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 246 *	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 247 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 250 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 251 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 252 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 255 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 256 *	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 257 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 264 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 265 *	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 266 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 270 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 271 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 275 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 276 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 277 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 278 *	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 279 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 281 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 284 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 285 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 293 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 297 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 300 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 301 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 323 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 324 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 343 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 349 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 350 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 353 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 358 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0

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'N'-DAY
365 DAYS
SGROUP# 1

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.01369 AND OCCURRED AT (313.0, 80.0) *

DIRECTION / (DEGREES) /	313.0	407.0	532.0	720.0	RANGE (METERS) 939.0	1221.0	1628.0	2128.0	2817.0
350.0 /	.35123	.35502	.33627	.29712	.25344	.20661	.16120	.12452	.09180
340.0 /	.35136	.36186	.35086	.31830	.27638	.22717	.17699	.13562	.09891
330.0 /	.44032	.45482	.43905	.39859	.34889	.28998	.22888	.17738	.13072
320.0 /	.54548	.55963	.53204	.47053	.40074	.32434	.24916	.18910	.13706
310.0 /	.67340	.70641	.69164	.63150	.55163	.45726	.36026	.27914	.20593
300.0 /	.70924	.72833	.70006	.64274	.58062	.50574	.42306	.34464	.26476
290.0 /	.63668	.63814	.59582	.53430	.47928	.41819	.35175	.28801	.22210
280.0 /	.61716	.62975	.60086	.54756	.49251	.42736	.35586	.28856	.22058
270.0 /	.68310	.72596	.71955	.66677	.59531	.51009	.42022	.33915	.25907
260.0 /	.66383	.67965	.64414	.57565	.50971	.44102	.37082	.30531	.23715
250.0 /	.70026	.72671	.69490	.62622	.56083	.49364	.42384	.35484	.27915
240.0 /	.71922	.77859	.77534	.71968	.64653	.55923	.46623	.38021	.29285
230.0 /	.59497	.64694	.65382	.61958	.56409	.48958	.40737	.33127	.25466
220.0 /	.45566	.50676	.52739	.50731	.45808	.38854	.31244	.24596	.18373
210.0 /	.33403	.34869	.33745	.30052	.25644	.20861	.16222	.12504	.09211
200.0 /	.26373	.28445	.28676	.26461	.22910	.18661	.14432	.11054	.08102
190.0 /	.24471	.26457	.26237	.23950	.21061	.17817	.14553	.11724	.08975
180.0 /	.26326	.28135	.27104	.23623	.19829	.16148	.12785	.10092	.07608
170.0 /	.25464	.26779	.25510	.22035	.18224	.14440	.10981	.08348	.06098
160.0 /	.22420	.23728	.22876	.20036	.16784	.13472	.10399	.08009	.05919
150.0 /	.27421	.30247	.30327	.27290	.23084	.18617	.14413	.11118	.08218
140.0 /	.29385	.30985	.30078	.27215	.23983	.20410	.16773	.13556	.10388
130.0 /	.31316	.33824	.33769	.31377	.27940	.23745	.19367	.15530	.11823
120.0 /	.39525	.42259	.41210	.36914	.31706	.25994	.20377	.15800	.11686
110.0 /	.57805	.58053	.52306	.42678	.33983	.26173	.19345	.14338	.10220
100.0 /	.79388	.75612	.64211	.48975	.36726	.26655	.18435	.12896	.08733
90.0 /	1.00394	.93202	.76725	.56363	.41017	.29129	.19855	.13820	.09360
80.0 /	1.01369	.91558	.73964	.53818	.39100	.27678	.18706	.12858	.08578
70.0 /	.93639	.82954	.66360	.48442	.35731	.25861	.18013	.12748	.08741
60.0 /	.80381	.71505	.57739	.43017	.32702	.24636	.18080	.13433	.09630
50.0 /	.63500	.58225	.49459	.39477	.31831	.25210	.19403	.14938	.11009
40.0 /	.52868	.49293	.42114	.33240	.26219	.20229	.15098	.11322	.08158
30.0 /	.49111	.48432	.44217	.37223	.30306	.23501	.17274	.12655	.08906
20.0 /	.45713	.45201	.41371	.34854	.28243	.21620	.15546	.11126	.07651
10.0 /	.42618	.41853	.38138	.32334	.26739	.21148	.15923	.11926	.08565
360.0 /	.40915	.41704	.39470	.34446	.28817	.22917	.17317	.12993	.09343

1

'N'-DAY
365 DAYS
SGROUP# 1

*** IWT Case 1--1986 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.01369 AND OCCURRED AT (313.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 6000.0
350.0 /	.03661
340.0 /	.03823
330.0 /	.05169
320.0 /	.05272
310.0 /	.08191
300.0 /	.11269
290.0 /	.09499
280.0 /	.09265
270.0 /	.10971
260.0 /	.10315
250.0 /	.12390
240.0 /	.12539
230.0 /	.10877
220.0 /	.07416
210.0 /	.03674
200.0 /	.03201
190.0 /	.03847
180.0 /	.03173
170.0 /	.02415
160.0 /	.02405
150.0 /	.03323
140.0 /	.04441
130.0 /	.04986
120.0 /	.04670
110.0 /	.03827
100.0 /	.02963
90.0 /	.03210
80.0 /	.02814
70.0 /	.03048
60.0 /	.03682
50.0 /	.04387
40.0 /	.03130
30.0 /	.03237
20.0 /	.02642
10.0 /	.03265
360.0 /	.03576

1

HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 48.19832 AND OCCURRED AT (407.0, 250.0) *

DIRECTION / (DEGREES) /	313.0	407.0	RANGE (METERS) 532.0	720.0	939.0
350.0 /	37.15656 (3,11)	45.89273 (3,11)	43.60344 (3,11)	37.29830 (358, 3)	37.42523 (358, 3)
340.0 /	39.68760 (165,10)	40.89778 (232,13)	36.93390 (232,13)	32.51314 (18,20)	30.97568 (18,20)
330.0 /	39.68760 (128, 9)	40.89779 (29,10)	37.41432 (179, 9)	36.16100 (249, 9)	36.23392 (249, 9)
320.0 /	47.45950 (150,10)	45.89272 (215,17)	43.60343 (215,17)	36.16093 (75, 4)	36.23386 (75, 4)

310.0 /	39.76266 (160, 9)	41.40117 (132, 9)	37.41431 (232,12)	36.16100 (172, 9)	36.23393 (172, 9)
300.0 /	46.74921 (219,10)	43.16091 (248, 8)	40.91232 (248, 8)	37.29830 (209, 7)	37.42527 (209, 7)
290.0 /	44.00558 (128,10)	40.89775 (257,10)	36.93387 (257,10)	37.30350 (59,20)	37.53876 (59,20)
280.0 /	39.76261 (243,15)	39.60004 (196, 9)	37.41429 (196, 9)	32.51314 (2, 9)	30.97568 (2, 9)
270.0 /	46.74923 (257,11)	45.89269 (38,13)	43.60340 (38,13)	42.34324 (309, 7)	44.94093 (309, 7)
260.0 /	38.90148 (76,13)	45.89273 (168,16)	43.60345 (168,16)	37.29830 (178, 7)	37.42523 (178, 7)
250.0 /	46.74923 (270,11)	48.19832 (349,17)	45.87944 (349,17)	42.18616 (59,19)	45.63854 (59,19)
240.0 /	45.58728 (237,10)	41.40117 (188, 8)	37.41425 (279,10)	37.29830 (173,17)	37.42523 (173,17)
230.0 /	47.45951 (246,11)	45.89274 (55,10)	43.60345 (55,10)	37.29830 (116, 8)	37.42523 (116, 8)
220.0 /	44.00558 (217,17)	40.89778 (160,11)	37.41430 (175,19)	37.29831 (102,22)	37.42523 (102,22)
210.0 /	46.74922 (293,16)	45.89269 (143, 9)	43.60341 (143, 9)	33.72092 (143, 9)	32.88034 (164, 9)
200.0 /	46.74922 (308,13)	40.11686 (308,13)	30.50863 (289, 8)	32.51313 (306,24)	30.97568 (306,24)
190.0 /	46.74922 (333,13)	40.11686 (333,13)	33.34165 (164,11)	27.55690 (38,12)	25.45286 (38,12)
180.0 /	46.74921 (172,13)	45.89272 (116, 9)	43.60343 (116, 9)	36.16093 (236, 9)	36.23386 (236, 9)
170.0 /	45.58730 (101,10)	39.08633 (101,10)	31.07645 (326,16)	37.29830 (194,20)	37.42523 (194,20)
160.0 /	47.45950 (251,11)	40.74723 (251,11)	29.90542 (251,11)	32.95061 (25,10)	32.88030 (25,10)
150.0 /	44.00555 (289,13)	45.89271 (203,17)	43.60342 (203,17)	33.72092 (203,17)	29.98956 (175,18)
140.0 /	46.74921 (163,16)	40.11685 (163,16)	35.55171 (161,11)	37.29830 (303, 1)	37.42523 (303, 1)
130.0 /	42.04675 (246,14)	35.95178 (246,14)	30.50864 (189,18)	37.29830 (299,20)	37.42523 (299,20)
120.0 /	47.69848 (217,16)	40.95942 (217,16)	37.41428 (229, 9)	31.52155 (316,17)	29.98959 (316,17)
110.0 /	46.74923 (310,11)	41.40117 (249,12)	37.40610 (249,12)	37.29830 (191, 8)	37.42523 (191, 8)
100.0 /	47.45950 (193,11)	40.74725 (193,11)	31.07646 (251,16)	31.52153 (51, 4)	29.98957 (51, 4)
90.0 /	47.69848 (3,16)	40.95941 (3,16)	33.35898 (3,15)	31.52154 (168,13)	29.98958 (168,13)
80.0 /	45.58729 (242,16)	47.61160 (174,18)	45.29985 (174,18)	35.09805 (174,18)	30.97568 (53, 2)
70.0 /	47.45950 (153,10)	40.74723 (153,10)	37.41428 (208, 9)	32.51314 (51,24)	30.97568 (51,24)
60.0 /	44.00558 (246,13)	48.19832 (163, 9)	45.87944 (163, 9)	35.56913 (163, 9)	25.60137 (163, 9)
50.0 /	39.76261 (246,13)	47.61160 (3,17)	45.29985 (3,17)	36.16095 (3,18)	36.23387 (3,18)
40.0 /	47.69847 (236,15)	48.19832 (101, 8)	45.87944 (101, 8)	35.56913 (101, 8)	27.21370 (76,18)
30.0 /	45.58730 (195,10)	47.61160 (265,18)	45.29986 (265,18)	36.16097 (227, 8)	36.23388 (227, 8)
20.0 /	44.00557 (133,12)	41.40117 (281,10)	37.41431 (283,16)	36.16098 (256, 8)	36.23389 (256, 8)
10.0 /	46.74921 (167,17)	40.11685 (167,17)	35.55169 (198, 9)	36.16096 (335, 2)	36.23388 (335, 2)
360.0 /	47.45950 (234,11)	47.61160 (160, 8)	45.29984 (160, 8)	35.09804 (160, 8)	32.88039 (52, 3)

1

HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 48.19832 AND OCCURRED AT (407.0, 250.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	31.94051 (358, 3)	24.64102 (358, 3)	19.41336 (141, 1)	18.37663 (141, 1)	10.77624 (141, 1)
340.0 /	25.65522 (18,20)	20.92067 (353,24)	19.41336 (160, 2)	18.37663 (160, 2)	10.77624 (160, 2)
330.0 /	30.87746 (249, 9)	24.13825 (220,22)	20.27228 (220,22)	18.37663 (209, 2)	10.77624 (209, 2)
320.0 /	30.87742 (75, 4)	23.77800 (75, 4)	17.70356 (75, 4)	15.65682 (168, 2)	8.94617 (168, 2)
310.0 /	30.87747 (172, 9)	23.77805 (172, 9)	19.41336 (161, 2)	18.37663 (161, 2)	10.77624 (161, 2)
300.0 /	31.94257 (209, 7)	24.67213 (209, 7)	19.41336 (153, 3)	18.37663 (153, 3)	10.77624 (153, 3)
290.0 /	32.49243 (59,20)	26.13210 (59,20)	21.68048 (242, 7)	18.37663 (73,22)	10.77624 (73,22)
280.0 /	27.77008 (352, 1)	25.73192 (352, 1)	21.68048 (352, 1)	18.37663 (197, 6)	10.77624 (197, 6)
270.0 /	40.15373 (309, 7)	32.57100 (309, 7)	25.85039 (309, 7)	20.05934 (309, 7)	10.77624 (286, 4)
260.0 /	31.94051 (178, 7)	24.64102 (178, 7)	20.27232 (190, 7)	18.37663 (129,22)	10.77624 (129,22)
250.0 /	40.72331 (59,19)	32.69277 (59,19)	25.59640 (59,19)	19.53890 (59,19)	10.77624 (263, 1)
240.0 /	31.94051 (173,17)	25.73192 (265,20)	21.68048 (265,20)	17.56492 (39, 1)	10.53620 (39, 1)

230.0 /	31.94051 (116, 8)	24.64102 (116, 8)	19.41336 (150,22)	18.37663 (150,22)	10.77624 (150,22)
220.0 /	31.94051 (102,22)	25.73192 (242,20)	21.68048 (242,20)	18.37663 (244, 1)	10.77624 (244, 1)
210.0 /	27.89380 (164, 9)	21.36455 (164, 9)	16.98893 (33,22)	16.63452 (33,22)	10.25322 (33,22)
200.0 /	26.19662 (289, 7)	20.86633 (289, 7)	16.47958 (289, 7)	12.79673 (289, 7)	7.48910 (44,21)
190.0 /	26.13369 (288,18)	24.13824 (288,18)	20.27226 (288,18)	18.37663 (157, 4)	10.77624 (157, 4)
180.0 /	30.87741 (236, 9)	23.77799 (236, 9)	17.70355 (236, 9)	15.65670 (282,21)	8.94608 (282,21)
170.0 /	31.94051 (194,20)	24.64102 (194,20)	18.37943 (194,20)	15.65668 (279,22)	9.11844 (21, 2)
160.0 /	27.89378 (25,10)	21.36452 (25,10)	18.27216 (119,24)	17.56492 (119,24)	10.53620 (119,24)
150.0 /	24.80123 (175,18)	18.68563 (175,18)	19.41336 (142,23)	18.37663 (142,23)	10.77624 (142,23)
140.0 /	31.94051 (303, 1)	24.64102 (303, 1)	19.86185 (49, 7)	18.37663 (248,21)	10.77624 (248,21)
130.0 /	31.94051 (299,20)	24.64102 (299,20)	20.27230 (119, 7)	15.76538 (119, 7)	9.40287 (64, 1)
120.0 /	26.13376 (288, 8)	24.13831 (288, 8)	20.27233 (288, 8)	18.37663 (38,21)	10.77624 (38,21)
110.0 /	31.94051 (191, 8)	24.64102 (191, 8)	20.27232 (229,20)	15.76540 (229,20)	8.94611 (351,21)
100.0 /	24.80124 (51, 4)	20.92067 (163,20)	17.22330 (163,20)	14.91479 (96,21)	8.39174 (96,21)
90.0 /	24.80125 (168,13)	18.68564 (168,13)	19.41336 (213, 4)	18.37663 (213, 4)	10.77624 (213, 4)
80.0 /	26.13373 (282,19)	24.13828 (282,19)	20.27230 (282,19)	15.76538 (282,19)	8.94614 (309,20)
70.0 /	25.65522 (51,24)	20.92067 (213, 2)	17.22330 (213, 2)	15.65673 (183, 4)	8.94611 (183, 4)
60.0 /	20.69521 (239,18)	16.49533 (323, 8)	16.67712 (183, 2)	15.65672 (183, 2)	8.94610 (183, 2)
50.0 /	30.87742 (3,18)	23.77800 (3,18)	17.70356 (3,18)	15.65673 (331, 1)	8.94611 (331, 1)
40.0 /	27.77008 (322, 7)	25.73192 (322, 7)	21.68048 (322, 7)	18.37663 (231, 5)	10.77624 (231, 5)
30.0 /	30.87744 (227, 8)	23.77802 (227, 8)	17.70357 (227, 8)	12.70709 (37,20)	6.96656 (37,20)
20.0 /	30.87744 (256, 8)	25.73192 (70, 3)	21.68048 (70, 3)	16.92234 (70, 3)	7.29948 (70, 3)
10.0 /	30.87744 (335, 2)	23.77801 (335, 2)	19.41336 (353,22)	18.37663 (353,22)	10.77624 (353,22)
360.0 /	27.89385 (52, 3)	24.13827 (126,22)	20.27229 (126,22)	15.76537 (126,22)	8.39174 (321,22)

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2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 47.61160 AND OCCURRED AT (407.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	34.53997 (214, 9)	39.42298 (214, 9)	35.55173 (214, 9)	33.72094 (3,11)	32.88034 (182, 7)
340.0 /	39.48970 (194,10)	37.07890 (205, 9)	33.35903 (205, 9)	31.52155 (103, 8)	29.98959 (103, 8)
330.0 /	38.90149 (190,10)	40.89776 (169, 8)	36.93390 (29,10)	36.16095 (185, 7)	36.23387 (185, 7)
320.0 /	44.00554 (160, 9)	40.74724 (150,10)	37.41431 (208,10)	36.16093 (162, 8)	36.23386 (162, 8)
310.0 /	38.90149 (286,15)	41.40117 (176, 9)	37.41422 (190, 9)	32.51313 (241, 7)	30.97568 (241, 7)
300.0 /	46.74920 (238,15)	40.11685 (219,10)	35.55165 (168, 9)	32.51314 (53, 8)	30.97568 (53, 8)
290.0 /	39.76266 (179,10)	39.42293 (178, 8)	35.55169 (178, 8)	31.52157 (4, 4)	29.98961 (4, 4)
280.0 /	38.90147 (244,11)	37.07887 (285,10)	33.35900 (285,10)	31.52157 (165, 7)	29.98961 (165, 7)
270.0 /	45.58729 (178,10)	45.89269 (235,10)	43.60340 (235,10)	36.16098 (215,20)	36.23391 (215,20)
260.0 /	38.90148 (94,15)	45.89268 (168,18)	43.60340 (168,18)	33.72095 (168,16)	32.88036 (22, 9)
250.0 /	45.58728 (252,12)	45.89274 (39,17)	43.60345 (39,17)	36.16097 (351, 8)	36.23389 (351, 8)
240.0 /	39.76263 (245,12)	40.89778 (316, 9)	37.40610 (188, 8)	36.16098 (316, 8)	36.23391 (316, 8)
230.0 /	37.93911 (29,13)	43.16088 (251, 9)	40.91228 (251, 9)	36.16096 (364,22)	36.23389 (364,22)
220.0 /	35.79236 (160,11)	39.60006 (175,19)	36.93390 (160,11)	36.16096 (150, 8)	36.23388 (150, 8)
210.0 /	45.58729 (257,14)	40.11686 (293,16)	33.35902 (350,16)	32.95064 (164, 9)	32.88034 (294, 9)
200.0 /	44.00558 (107,10)	37.68493 (107,10)	29.42322 (308,13)	31.52150 (288,17)	30.32893 (289, 7)
190.0 /	45.58730 (237,17)	39.08633 (237,17)	29.42322 (333,13)	25.45029 (164,11)	24.08161 (288,18)
180.0 /	37.15655 (116, 9)	40.89775 (317,10)	37.41432 (53,11)	33.72093 (116, 9)	27.21371 (351, 5)
170.0 /	39.76260 (169, 9)	35.44621 (326,16)	29.91408 (363,10)	32.51314 (76, 2)	30.97568 (76, 2)
160.0 /	47.45950 (289,11)	40.74723 (289,11)	29.90542 (289,11)	31.52152 (5, 9)	29.98955 (5, 9)

150.0 /	37.15654 (203,17)	39.42293 (169,10)	35.55169 (169,10)	31.52152 (175,18)	29.98956 (299,21)
140.0 /	39.76265 (289,13)	39.42295 (161,11)	31.07647 (169,18)	28.72257 (55, 3)	27.96014 (221,20)
130.0 /	38.90148 (12,14)	34.16907 (254,17)	29.91406 (254,17)	32.95064 (237,23)	32.88034 (237,23)
120.0 /	42.04677 (246,14)	39.60004 (229, 9)	35.55171 (213,17)	31.52153 (254,18)	29.98956 (254,18)
110.0 /	39.68760 (326,14)	40.11686 (310,11)	35.55172 (277,17)	32.51313 (269,17)	30.97568 (269,17)
100.0 /	39.48970 (280,11)	35.44622 (219,18)	31.07646 (219,18)	28.72264 (316,16)	27.96004 (221,19)
90.0 /	44.00557 (351,12)	37.68492 (351,12)	30.50865 (227, 9)	31.52153 (219,22)	29.98957 (219,22)
80.0 /	42.04677 (234,15)	41.40117 (2,15)	37.40610 (2,15)	32.51314 (53, 2)	30.97568 (284,17)
70.0 /	45.58731 (22,12)	39.60004 (208, 9)	33.35899 (249,17)	28.72256 (253,16)	27.21369 (253,16)
60.0 /	39.48970 (38,15)	41.40117 (212, 8)	37.40610 (212, 8)	27.96800 (212, 8)	25.45285 (239,18)
50.0 /	38.90147 (249,16)	47.61160 (351,16)	45.29985 (351,16)	35.09804 (3,17)	32.88033 (5, 5)
40.0 /	47.45950 (199, 9)	41.40117 (324, 9)	37.40610 (324, 9)	28.72257 (76,18)	25.60137 (101, 8)
30.0 /	38.50625 (265,18)	43.16092 (184,19)	40.91232 (184,19)	35.09805 (265,18)	32.88030 (60, 3)
20.0 /	37.21186 (195,10)	39.60007 (283,16)	37.41426 (175, 9)	32.51314 (163, 8)	30.97568 (163, 8)
10.0 /	39.76262 (133,12)	39.42294 (198, 9)	33.35900 (216, 8)	32.51314 (249,11)	30.97568 (249,11)
360.0 /	46.74923 (249,13)	45.89275 (283,17)	43.60346 (283,17)	33.72096 (283,17)	31.06613 (37, 8)

1

2ND HIGH
1-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 47.61160 AND OCCURRED AT (407.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	27.89381 (182, 7)	21.36456 (182, 7)	19.41336 (161,22)	18.37663 (161,22)	10.77624 (161,22)
340.0 /	24.80126 (103, 8)	19.62490 (206, 7)	17.22330 (353,24)	15.65680 (335, 6)	8.94615 (335, 6)
330.0 /	30.87742 (185, 7)	23.77804 (249, 9)	19.41336 (209, 2)	15.76537 (220,22)	8.94615 (205, 2)
320.0 /	30.87742 (162, 8)	23.77800 (162, 8)	17.70356 (162, 8)	14.91480 (150, 3)	8.39174 (150, 3)
310.0 /	25.65522 (241, 7)	20.92067 (149, 6)	19.41336 (167, 3)	18.37663 (167, 3)	10.77624 (167, 3)
300.0 /	25.65522 (53, 8)	20.92067 (39, 5)	19.41336 (166, 3)	18.37663 (166, 3)	10.77624 (166, 3)
290.0 /	27.77008 (242, 7)	25.73192 (242, 7)	20.92012 (59,20)	18.37663 (257, 2)	10.77624 (257, 2)
280.0 /	26.13381 (300, 2)	24.13835 (300, 2)	20.27237 (300, 2)	18.37663 (274, 7)	10.77624 (274, 7)
270.0 /	30.87745 (215,20)	23.77803 (215,20)	19.41336 (286, 4)	18.37663 (286, 4)	10.77624 (286,23)
260.0 /	29.10799 (18, 8)	24.19383 (18, 8)	20.27232 (246, 8)	18.37663 (135, 1)	10.77624 (135, 1)
250.0 /	30.87744 (351, 8)	23.77802 (351, 8)	19.41336 (263, 1)	18.37663 (263, 1)	10.77624 (353, 2)
240.0 /	30.87744 (316, 8)	24.64102 (173,17)	18.37943 (173,17)	16.92234 (265,20)	10.25322 (105, 6)
230.0 /	30.87743 (364,22)	23.77802 (364,22)	19.41336 (161,24)	18.37663 (161,24)	10.77624 (161,24)
220.0 /	30.87743 (150, 8)	24.64102 (102,22)	20.27233 (158, 7)	16.92234 (242,20)	10.14578 (293, 6)
210.0 /	27.89380 (294, 9)	21.36455 (294, 9)	16.67720 (176, 4)	15.65679 (176, 4)	8.94615 (176, 4)
200.0 /	25.65521 (306,24)	19.62483 (283, 1)	16.10452 (283, 1)	12.32002 (283, 1)	7.48063 (22,21)
190.0 /	22.00980 (244,21)	19.92275 (273,19)	19.41336 (157, 4)	15.76535 (288,18)	8.94606 (301, 2)
180.0 /	22.40447 (351, 5)	16.78897 (351, 5)	16.67710 (282,21)	15.65667 (284,22)	8.94607 (284,22)
170.0 /	25.65522 (76, 2)	19.36384 (76, 2)	16.67708 (279,22)	13.18895 (21, 2)	8.94608 (279,22)
160.0 /	24.80123 (5, 9)	19.62485 (285,19)	16.67708 (286,21)	15.65668 (286,21)	8.94608 (286,21)
150.0 /	24.80123 (299,21)	18.68563 (299,21)	14.26184 (100, 1)	14.58665 (100, 1)	9.59698 (100, 1)
140.0 /	23.54229 (221,20)	22.80990 (49, 7)	19.41336 (248,21)	16.28879 (54,22)	10.14578 (54,22)
130.0 /	27.89381 (237,23)	24.13828 (119, 7)	18.37943 (299,20)	14.91480 (144,21)	8.39174 (144,21)
120.0 /	24.80125 (316,17)	20.92067 (281,19)	19.41336 (38,21)	15.76540 (288, 8)	8.94614 (201, 1)
110.0 /	26.13375 (229,20)	24.13830 (229,20)	18.37943 (191, 8)	15.65674 (351,21)	8.09379 (47,22)
100.0 /	23.54219 (221,19)	18.68564 (51, 4)	16.20915 (96,21)	13.22419 (163,20)	6.96655 (213, 1)
90.0 /	24.80124 (219,22)	18.68564 (219,22)	16.20915 (76,20)	14.91480 (76,20)	8.51199 (3,22)
80.0 /	25.65522 (53, 2)	19.92272 (76,19)	16.67718 (309,20)	15.65678 (309,20)	6.88421 (183, 5)

70.0 /	23.38828 (213, 2)	19.36384 (51,24)	16.67713 (183, 4)	13.22419 (213, 2)	7.75066 (65,22)
60.0 /	18.87722 (323, 8)	16.19729 (324,20)	16.20915 (183, 1)	14.91480 (183, 1)	8.39174 (183, 1)
50.0 /	27.89380 (5, 5)	21.36455 (5, 5)	16.67714 (331, 1)	15.65670 (191, 2)	8.94609 (191, 2)
40.0 /	22.40446 (76,18)	17.40401 (231, 5)	19.41336 (231, 5)	16.92234 (322, 7)	8.39174 (54, 3)
30.0 /	27.89377 (60, 3)	21.36453 (60, 3)	16.10457 (38, 5)	12.70709 (191,23)	6.96656 (191,23)
20.0 /	27.77007 (70, 3)	24.13825 (331, 2)	20.27228 (331, 2)	15.76536 (331, 2)	6.72248 (331, 2)
10.0 /	25.65521 (249,11)	20.92067 (159,22)	17.70357 (335, 2)	14.91480 (225,22)	8.39174 (225,22)
360.0 /	26.13372 (126,22)	21.36459 (52, 3)	17.22330 (52, 1)	14.91480 (321,22)	6.96653 (171, 3)

1

HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 33.03192 AND OCCURRED AT (313.0, 40.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	18.24751 (194, 4)	17.54254 (214, 3)	19.00783 (214, 3)	17.84735 (206, 3)	17.71734 (358, 1)
340.0 /	20.98634 (232, 5)	23.46427 (232, 5)	20.86978 (232, 5)	17.14029 (334, 3)	17.60092 (334, 3)
330.0 /	22.26381 (29, 4)	22.06251 (29, 4)	26.35168 (41, 3)	27.83056 (41, 3)	24.72784 (41, 3)
320.0 /	21.60824 (272, 4)	18.65965 (215, 3)	14.90550 (215, 3)	19.62282 (75, 2)	20.57427 (75, 2)
310.0 /	25.16942 (286, 4)	23.93959 (151, 3)	21.69249 (151, 3)	21.08314 (171, 2)	20.80945 (171, 2)
300.0 /	28.80359 (238, 5)	24.48676 (186, 4)	23.28878 (272, 6)	19.12827 (272, 6)	14.54562 (272, 6)
290.0 /	28.57064 (238, 5)	20.52847 (238, 5)	16.61868 (68, 3)	16.17389 (353, 6)	18.18437 (353, 6)
280.0 /	25.18086 (243, 5)	20.06313 (243, 5)	18.27250 (147, 3)	20.02337 (2, 3)	18.80953 (2, 3)
270.0 /	24.06277 (235, 4)	24.86274 (235, 4)	22.88468 (320, 3)	21.94963 (320, 3)	18.35732 (320, 3)
260.0 /	24.80043 (168, 6)	30.66957 (168, 6)	29.17982 (168, 6)	22.59219 (168, 6)	16.22781 (168, 6)
250.0 /	23.16916 (67, 4)	21.77155 (67, 4)	18.70932 (83, 6)	19.27703 (351, 3)	18.66943 (351, 3)
240.0 /	26.37386 (237, 4)	26.80151 (76, 3)	26.16590 (76, 3)	23.61898 (316, 3)	21.91993 (316, 3)
230.0 /	22.38018 (293, 4)	20.57700 (304, 5)	18.89859 (158, 3)	17.84762 (158, 3)	14.88273 (158, 3)
220.0 /	20.39585 (177, 4)	16.26355 (177, 4)	15.46239 (361, 5)	17.49438 (361, 5)	15.87138 (361, 5)
210.0 /	23.98137 (12, 4)	24.46901 (12, 4)	20.53371 (12, 4)	14.58692 (12, 4)	11.34575 (6, 3)
200.0 /	21.93192 (108, 4)	19.15661 (289, 3)	22.30851 (289, 3)	21.94729 (289, 3)	19.04017 (289, 3)
190.0 /	21.25547 (289, 4)	19.29428 (289, 4)	16.57871 (363, 3)	15.38292 (363, 3)	12.62231 (363, 3)
180.0 /	22.26978 (236, 4)	19.66058 (236, 4)	18.45102 (303, 3)	20.89481 (303, 3)	18.85510 (303, 3)
170.0 /	21.90855 (177, 5)	18.44693 (177, 5)	14.89109 (288, 4)	12.87107 (288, 4)	12.47508C(194, 7)
160.0 /	21.38040 (177, 5)	16.94905 (363, 5)	13.24655 (363, 5)	10.98354C(25, 4)	11.10431 (316, 7)
150.0 /	20.18367 (289, 5)	17.35650 (289, 5)	14.53447 (203, 6)	16.39577 (76, 1)	15.42747 (76, 1)
140.0 /	20.32052 (289, 5)	18.31232 (289, 5)	15.64477 (13, 4)	12.43277 (303, 1)	12.47508 (303, 1)
130.0 /	22.14969 (246, 5)	18.87955 (189, 6)	16.82400 (189, 6)	13.28046 (43, 1)	12.47512 (299, 7)
120.0 /	20.89647 (177, 6)	23.08303 (177, 6)	20.26766 (177, 6)	15.01406 (276, 6)	13.61691 (336, 7)
110.0 /	26.19636 (326, 5)	27.92782 (177, 6)	24.90006 (177, 6)	18.34626 (177, 6)	12.78700 (177, 6)
100.0 /	22.37970 (229, 5)	23.00803 (229, 5)	19.46178 (160, 6)	13.92200 (160, 6)	11.76916 (51, 2)
90.0 /	29.73104 (194, 5)	22.27645 (158, 6)	18.58201 (158, 6)	13.13734 (158, 6)	11.97832 (51, 2)
80.0 /	30.67218 (276, 5)	25.25267 (174, 6)	23.13468 (174, 6)	17.93645 (282, 6)	15.40082 (282, 6)
70.0 /	26.04053 (234, 5)	20.09974 (163, 4)	15.58574 (163, 4)	16.28107 (253, 6)	15.01044 (253, 6)
60.0 /	30.58544 (255, 4)	23.79678 (212, 3)	21.87568 (212, 3)	17.47776 (212, 3)	13.12644 (212, 3)
50.0 /	21.66402 (219, 5)	20.43065 (3, 6)	24.02045 (3, 6)	23.75302 (3, 6)	20.49357 (3, 6)
40.0 /	33.03192 (170, 4)	29.54467 (170, 4)	22.59659 (170, 4)	14.80355 (170, 4)	13.18452 (75, 6)
30.0 /	27.33669 (170, 4)	25.43213 (170, 4)	20.05209 (170, 4)	15.98363 (185, 4)	14.51679 (185, 4)
20.0 /	20.11280 (102, 4)	18.97232 (37, 4)	20.27186 (52, 5)	19.77068 (52, 5)	16.67709 (52, 5)
10.0 /	24.12870 (181, 4)	18.84232 (181, 4)	18.46390 (37, 6)	20.53841 (37, 6)	18.36321 (37, 6)
360.0 /	23.56007 (234, 4)	18.46796 (234, 4)	18.79331 (345, 4)	20.74392 (345, 4)	18.51329 (345, 4)

1 HIGH 3-HR SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 33.03192 AND OCCURRED AT (313.0, 40.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	15.89023 (358, 1)	12.75178 (358, 1)	9.76643 (358, 1)	7.07076 (358, 1)	3.64374 (37, 1)
340.0 /	15.40614 (334, 3)	12.14443 (334, 3)	9.18200 (334, 3)	6.57527 (334, 3)	3.59479 (160, 1)
330.0 /	19.68240 (41, 3)	14.40458 (41, 3)	11.20632 (205, 1)	10.50208 (205, 1)	5.98222 (205, 1)
320.0 /	18.37906 (75, 2)	14.80779 (75, 2)	11.41326 (75, 2)	8.31946 (75, 2)	3.52307 (139, 2)
310.0 /	17.76493 (171, 2)	13.76421 (171, 2)	10.80610 (71, 1)	9.94320 (71, 1)	5.59449 (71, 1)
300.0 /	13.91284 (39, 2)	12.37450 (39, 2)	11.11248 (153, 1)	10.36122 (153, 1)	5.91425 (153, 1)
290.0 /	17.08701 (353, 6)	14.33955 (353, 6)	12.34621 (257, 1)	11.47770 (257, 1)	6.53059 (257, 1)
280.0 /	15.45016 (2, 3)	11.68608C(174, 2)	10.92666C(174, 2)	9.22025C(174, 2)	4.54729C(174, 2)
270.0 /	14.52842 (309, 3)	11.63099 (309, 3)	10.38249 (134, 2)	8.64377 (134, 2)	4.64437 (311, 2)
260.0 /	14.15138 (281, 1)	12.55667 (281, 1)	11.41808 (305, 2)	10.38076 (305, 2)	5.64208 (305, 2)
250.0 /	15.58126 (351, 3)	11.94290 (252, 1)	10.04444 (263, 2)	9.20729 (263, 2)	5.11943 (263, 2)
240.0 /	18.15451 (316, 3)	13.73291 (316, 3)	10.09097 (316, 3)	7.37189 (136, 2)	4.40992 (116, 2)
230.0 /	11.41354 (86, 2)	11.17211 (86, 2)	9.84934 (86, 2)	8.91686 (89, 1)	5.48781 (89, 1)
220.0 /	14.40284 (292, 1)	11.70954 (292, 1)	10.53362 (294, 2)	10.29469 (294, 2)	6.17531 (294, 2)
210.0 /	9.43520 (6, 3)	7.32179 (6, 3)	6.91933 (361, 8)	6.79650 (361, 8)	4.21710 (361, 8)
200.0 /	15.10880 (289, 3)	11.28057 (289, 3)	8.55819 (289, 3)	6.45630 (289, 3)	3.07463 (289, 3)
190.0 /	10.03130 (307, 1)	8.56984 (289, 2)	7.22968 (289, 2)	6.62192 (113, 2)	4.14495 (113, 2)
180.0 /	15.07682 (303, 3)	11.04768 (303, 3)	8.57613 (307, 7)	7.73412 (307, 7)	4.19975 (307, 7)
170.0 /	10.64684C(194, 7)	8.21367C(194, 7)	6.12648C(194, 7)	5.21889 (279, 8)	3.03948 (21, 1)
160.0 /	11.06371 (316, 7)	9.57212 (316, 7)	7.69411 (316, 7)	5.85497C(119, 8)	3.51207C(119, 8)
150.0 /	12.78447 (127, 7)	11.85852 (127, 7)	10.20837 (127, 7)	8.13708 (127, 7)	3.84322 (115, 7)
140.0 /	10.64684 (303, 1)	8.21367 (303, 1)	6.62062C(49, 3)	6.12565 (248, 7)	3.59209 (248, 7)
130.0 /	11.96822 (141, 7)	10.89035 (141, 7)	9.28992 (141, 7)	8.37490 (64, 1)	5.54895 (64, 1)
120.0 /	12.08301 (336, 7)	9.61594 (336, 7)	8.50032 (201, 1)	7.83750 (201, 1)	4.31014 (201, 1)
110.0 /	10.64684C(191, 3)	12.19056 (351, 7)	12.21627 (351, 7)	10.77385 (351, 7)	5.57091 (351, 7)
100.0 /	9.76437 (226, 7)	8.84179 (112, 1)	9.24280 (112, 1)	8.36313 (112, 1)	4.59177 (112, 1)
90.0 /	10.63305 (51, 2)	8.47489 (51, 2)	6.47112C(213, 2)	6.12554C(213, 2)	3.59208C(213, 2)
80.0 /	11.92804 (282, 6)	9.80976 (183, 2)	9.00125 (183, 2)	7.49632 (183, 2)	3.62927 (183, 2)
70.0 /	12.18619 (253, 6)	9.05143 (253, 6)	7.95749 (181, 7)	6.71985 (181, 7)	3.38985 (325, 1)
60.0 /	9.28060 (212, 3)	10.06511 (183, 1)	10.96209 (183, 1)	10.19051 (183, 1)	5.77928 (183, 1)
50.0 /	16.02297 (3, 6)	11.53781 (3, 6)	8.19781 (3, 6)	7.16257 (70, 7)	3.96786 (61, 8)
40.0 /	11.04473 (322, 3)	9.81620 (322, 3)	9.99420C(231, 2)	9.35210C(231, 2)	5.29756C(231, 2)
30.0 /	12.16058 (185, 1)	10.58088 (185, 1)	9.28277 (191, 8)	8.47139 (191, 8)	4.64437 (191, 8)
20.0 /	12.83030 (52, 5)	10.18042 (102, 7)	8.13928 (102, 7)	6.43399 (4, 8)	3.05935 (4, 8)
10.0 /	14.62537 (37, 6)	10.70000 (37, 6)	7.68825 (37, 6)	6.14191 (49, 7)	3.59208 (353, 8)
360.0 /	17.09404 (52, 1)	14.09509 (52, 1)	11.01452 (52, 1)	8.11494 (52, 1)	3.23311 (36, 7)

1 2ND HIGH 3-HR SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *

* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.88235 AND OCCURRED AT (313.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	17.99487 (234, 4)	16.82886 (206, 3)	18.89884 (206, 3)	17.28925 (182, 3)	15.30292 (182, 3)
340.0 /	20.53798 (194, 4)	15.64533 (281, 4)	16.38396C(240, 3)	16.90455 (1, 3)	15.16075 (1, 3)
330.0 /	16.00035 (146, 3)	20.44697 (41, 3)	18.25916 (29, 4)	17.83115 (331, 3)	15.13540 (331, 3)
320.0 /	21.10126 (164, 5)	17.52310 (272, 4)	14.69128 (167, 3)	15.91579 (141, 3)	14.87687 (324, 2)
310.0 /	24.95230 (282, 4)	23.13952 (286, 4)	18.11182 (286, 4)	20.31858 (335, 4)	18.86919 (335, 4)
300.0 /	27.88235 (186, 4)	23.97073 (272, 6)	18.56075 (186, 4)	16.67843 (134, 3)	14.51168 (134, 3)
290.0 /	19.95991 (315, 4)	17.12634 (186, 4)	15.16838 (47, 6)	15.91154 (343, 1)	15.48099 (343, 1)
280.0 /	21.25423 (315, 4)	18.19599 (315, 4)	16.57415 (2, 3)	18.45991 (186, 7)	16.70981 (186, 7)
270.0 /	21.66192C(176, 5)	19.73856 (320, 3)	21.31960 (235, 4)	17.55569 (132, 3)	16.51037 (309, 3)
260.0 /	24.50617 (260, 4)	22.39519 (258, 5)	18.45424 (258, 5)	17.56587 (69, 1)	16.09096 (69, 1)
250.0 /	22.89011 (260, 4)	21.42160 (245, 4)	18.66498 (260, 3)	18.01180 (260, 3)	15.37873 (260, 3)
240.0 /	23.23483 (245, 4)	22.65246 (245, 4)	22.20402 (316, 3)	21.80877 (76, 3)	17.48651 (306, 2)
230.0 /	21.80075 (292, 5)	20.50535 (293, 4)	17.84788 (304, 5)	15.83242 (317, 3)	13.37216 (307, 4)
220.0 /	18.37889 (100, 4)	15.95222 (325, 5)	14.43015 (350, 6)	15.76937 (361, 6)	15.82526 (292, 1)
210.0 /	17.24365 (294, 4)	16.26360 (294, 4)	14.53447 (143, 3)	12.62294 (6, 3)	11.01040 (294, 3)
200.0 /	17.47963 (325, 4)	17.82749 (108, 4)	15.55141 (306, 5)	19.14839 (306, 5)	18.14248 (306, 5)
190.0 /	17.76440 (11, 5)	17.91723 (11, 5)	14.93058 (289, 4)	14.06722 (307, 1)	12.59307 (307, 1)
180.0 /	20.19821 (288, 4)	19.63010 (288, 4)	16.09820 (288, 4)	12.05365C(236, 3)	12.07795C(236, 3)
170.0 /	17.83020 (44, 5)	16.80267 (44, 5)	14.45920 (15, 4)	12.43277C(194, 7)	10.32523 (76, 1)
160.0 /	18.42637 (363, 5)	15.92512 (177, 5)	12.84324 (44, 6)	10.86525 (44, 6)	10.96010C(25, 4)
150.0 /	19.16370 (319, 5)	16.93921 (319, 5)	14.37168 (266, 6)	14.30981 (56, 6)	12.82846 (56, 6)
140.0 /	17.67988 (204, 5)	16.98685 (13, 4)	14.00105 (289, 5)	12.29721 (13, 4)	9.53180 (43, 1)
130.0 /	17.15462 (113, 6)	18.37482 (246, 5)	15.32619 (113, 6)	13.11436 (54, 6)	12.13112 (141, 7)
120.0 /	18.70394 (189, 6)	21.21916 (189, 6)	18.98893 (189, 6)	14.73921 (177, 6)	12.44849 (276, 6)
110.0 /	25.13633 (192, 6)	24.88418 (192, 6)	20.87388 (359, 5)	15.28069 (359, 5)	12.47508C(191, 3)
100.0 /	21.66701 (160, 6)	22.80669 (160, 6)	19.35498 (229, 5)	13.73009 (229, 5)	10.35970 (226, 7)
90.0 /	23.36068 (273, 5)	21.31124 (157, 6)	17.75148 (157, 6)	12.53114 (157, 6)	10.06058 (99, 3)
80.0 /	24.36099 (234, 5)	24.82044 (276, 5)	17.82689 (282, 6)	17.47432 (174, 6)	13.04334 (331, 6)
70.0 /	25.29300 (255, 4)	19.78227 (234, 5)	15.55859 (256, 5)	13.59311C(320, 6)	11.79706C(320, 6)
60.0 /	24.95905 (97, 4)	23.51586 (255, 4)	16.70182 (249, 6)	13.20945 (249, 6)	10.20057 (322, 5)
50.0 /	18.96174 (250, 4)	19.04123 (351, 6)	20.54650 (351, 6)	18.29319 (351, 6)	17.42077C(1, 6)
40.0 /	17.84279C(244, 5)	16.95267 (35, 5)	15.29315C(101, 3)	14.67399 (75, 6)	12.91416 (358, 4)
30.0 /	24.75297 (195, 4)	20.58032 (195, 4)	15.58417 (214, 6)	13.71346 (352, 5)	12.73934 (225, 7)
20.0 /	17.47963 (240, 5)	17.09300 (52, 5)	17.08804 (37, 4)	16.74009 (70, 3)	15.39804 (70, 3)
10.0 /	21.07714 (102, 4)	18.70271 (321, 4)	16.39488 (346, 4)	13.56576 (346, 4)	12.07796 (335, 1)
360.0 /	19.01065 (181, 4)	17.01740 (1, 4)	15.09995 (160, 3)	16.47468 (52, 1)	18.46732 (52, 1)

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2ND HIGH
3-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.88235 AND OCCURRED AT (313.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0

350.0 /	12.41859 (4, 3)	9.24935 (4, 3)	7.96450 (37, 1)	7.04922 (37, 1)	3.61049C(30, 2)
340.0 /	12.02815 (1, 3)	8.72691 (1, 3)	7.12449 (73, 7)	6.37573 (73, 7)	3.38425 (73, 7)
330.0 /	12.64231C(165, 1)	11.11297C(165, 1)	10.36401 (41, 3)	7.13855 (41, 3)	3.59208C(209, 1)
320.0 /	13.70976 (299, 1)	11.79992 (299, 1)	9.44464 (299, 1)	7.08276 (299, 1)	3.41100 (163, 1)
310.0 /	15.34726 (331, 2)	11.49926 (331, 2)	10.31129 (171, 2)	7.34989 (171, 2)	3.68062 (160, 2)
300.0 /	13.90962 (192, 7)	12.37261 (192, 7)	10.13006 (39, 2)	8.82935 (149, 1)	4.92014C(198, 1)
290.0 /	13.26793 (309, 2)	11.57347 (309, 2)	11.36635 (353, 6)	8.47431 (353, 6)	4.50271C(121, 1)
280.0 /	14.24597 (17, 6)	11.58840 (2, 3)	10.00956 (281, 3)	8.52386 (297, 1)	4.46746 (297, 1)
270.0 /	14.03016 (320, 3)	11.33900 (134, 2)	9.28277 (311, 2)	8.47139 (311, 2)	4.17764 (134, 2)
260.0 /	13.02738 (69, 1)	10.77973 (305, 2)	10.27336 (281, 1)	8.47140 (315, 2)	4.64438 (315, 2)
250.0 /	13.60941 (59, 7)	11.80063 (351, 3)	9.75734 (252, 1)	8.54459 (253, 8)	5.03269 (95, 2)
240.0 /	13.92366 (306, 2)	10.24362 (25, 2)	8.69971 (136, 2)	7.04318 (316, 3)	3.62305 (136, 2)
230.0 /	11.35869 (158, 3)	8.56847 (364, 8)	9.08604 (89, 1)	7.95277 (86, 2)	3.60422 (21, 2)
220.0 /	13.67733 (361, 6)	11.00925 (242, 7)	9.03688 (292, 1)	6.82591 (242, 7)	3.59208 (244, 1)
210.0 /	9.38739 (294, 3)	7.23873 (294, 3)	5.66298 (33, 8)	5.54484 (33, 8)	3.41774 (33, 8)
200.0 /	14.93632 (306, 5)	11.19265 (306, 5)	8.16955 (306, 5)	5.68164 (306, 5)	2.49637 (44, 7)
190.0 /	9.53670 (363, 3)	8.39111 (288, 6)	6.97600 (288, 6)	6.12554C(157, 2)	3.59208C(157, 2)
180.0 /	10.29247C(236, 3)	8.22693 (307, 7)	7.93721 (303, 3)	5.71650 (331, 7)	3.03205 (331, 7)
170.0 /	8.55174 (76, 1)	6.45461 (76, 1)	5.55903 (279, 8)	4.39632 (21, 1)	2.98203 (279, 8)
160.0 /	9.29793C(25, 4)	7.12151C(25, 4)	6.09072C(119, 8)	5.79322 (316, 7)	2.98203 (286, 7)
150.0 /	12.60598 (76, 1)	9.36164 (76, 1)	7.96495 (115, 7)	7.14144 (115, 7)	3.67209 (127, 7)
140.0 /	7.84743 (221, 7)	7.60330C(49, 3)	6.53515 (284, 7)	5.93848 (284, 7)	3.43280C(20, 8)
130.0 /	10.64686 (299, 7)	9.65794 (200, 7)	8.74284 (200, 7)	7.35604 (141, 7)	3.59355 (200, 7)
120.0 /	10.62719 (100, 7)	8.78445 (100, 7)	7.90822 (129, 2)	6.53750 (129, 2)	3.59208C(38, 7)
110.0 /	10.56859 (51, 3)	8.59030 (59, 1)	8.97782 (59, 1)	8.15186 (59, 1)	4.44137 (59, 1)
100.0 /	9.60725 (51, 2)	8.27865 (226, 7)	6.60512 (226, 7)	5.16334 (112, 2)	2.79725 (96, 7)
90.0 /	8.26708C(168, 5)	6.57944 (19, 3)	6.45431 (51, 2)	4.97176C(76, 7)	2.83733 (3, 8)
80.0 /	10.07903 (331, 6)	8.49397 (282, 6)	6.75743 (282, 7)	5.25513 (282, 7)	2.98205C(309, 7)
70.0 /	10.17227 (184, 2)	8.83617 (184, 2)	7.53060 (325, 1)	6.62879 (325, 1)	3.32426 (181, 7)
60.0 /	8.38591 (323, 3)	6.96084 (323, 3)	6.01064 (211, 7)	5.15061 (211, 7)	2.61018 (211, 7)
50.0 /	14.45273C(1, 6)	10.86467C(1, 6)	8.11216 (70, 7)	6.29553 (334, 7)	3.70324 (70, 7)
40.0 /	10.54306 (75, 6)	9.05284C(231, 2)	8.34429 (54, 1)	7.59014 (54, 1)	4.12532 (54, 1)
30.0 /	11.69853 (185, 4)	9.43335 (225, 7)	8.55120 (185, 1)	6.96432 (37, 7)	3.40390 (37, 7)
20.0 /	12.46351 (70, 3)	9.22537 (70, 3)	7.67559 (4, 8)	6.07682 (102, 7)	2.43316 (70, 1)
10.0 /	10.29248 (335, 1)	8.76564 (49, 7)	7.67661 (49, 7)	6.12554 (353, 8)	3.44811 (50, 1)
360.0 /	14.77037 (345, 4)	10.84835 (345, 4)	7.83321 (345, 4)	6.17654 (36, 7)	3.16394 (52, 1)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 21.52726 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	9.39775 (126, 2)	7.94330 (75, 2)	6.68046 (75, 2)	6.98112 (1, 1)	6.67205 (358, 1)
340.0 /	10.64741 (194, 2)	9.12778 (194, 2)	7.92994 (232, 2)	9.14952 (232, 3)	9.49657 (232, 3)
330.0 /	10.11667 (329, 2)	10.23190 (329, 2)	8.48552 (329, 2)	8.97701 (41, 1)	9.33039 (41, 1)
320.0 /	12.44734 (286, 2)	11.14501 (286, 2)	8.51583 (75, 1)	10.86477 (75, 1)	10.86168 (75, 1)
310.0 /	18.83812 (286, 2)	16.36461 (286, 2)	12.49962 (328, 2)	10.47155 (171, 1)	9.58408 (171, 1)
300.0 /	19.00419C(189, 2)	14.80738 (286, 2)	10.66925 (286, 2)	6.70124 (274, 2)	6.91669 (169, 3)
290.0 /	15.76943 (315, 2)	12.97314 (315, 2)	9.29334 (315, 2)	10.01848 (343, 1)	9.81408 (333, 1)
280.0 /	17.28745 (315, 2)	14.99247 (315, 2)	12.66544 (327, 2)	9.90643 (327, 2)	9.08743C(174, 1)

270.0 /	16.38376 (188, 2)	14.41603C(235, 2)	11.71340C(235, 2)	9.96846 (132, 1)	10.16704 (132, 1)
260.0 /	18.13098 (258, 2)	16.17652 (258, 2)	12.39047 (258, 2)	8.56954 (69, 1)	7.48832 (69, 1)
250.0 /	20.63893 (260, 2)	18.09608 (260, 2)	13.71602 (260, 2)	11.48073 (351, 1)	10.89552 (351, 1)
240.0 /	16.06040 (292, 2)	15.75600C(245, 2)	13.13809C(245, 2)	11.67443C(188, 1)	11.32259C(188, 1)
230.0 /	16.05384 (293, 2)	15.88097 (293, 2)	13.60878 (293, 2)	10.13247 (293, 2)	8.35578 (340, 3)
220.0 /	16.40399 (293, 2)	14.43729 (293, 2)	13.67453 (361, 2)	14.61514 (361, 2)	12.86869 (361, 2)
210.0 /	15.33265 (12, 2)	14.81346 (12, 2)	12.01338 (12, 2)	10.42589 (301, 2)	8.68757 (301, 2)
200.0 /	12.08865 (325, 2)	9.54304 (325, 2)	10.19494 (306, 2)	11.82770 (306, 2)	10.81468 (306, 2)
190.0 /	9.05898C(237, 3)	9.25220C(237, 3)	8.50617C(237, 3)	8.04828 (307, 1)	7.22183 (307, 1)
180.0 /	8.86764 (44, 2)	9.08271 (236, 2)	8.95332 (236, 2)	9.23290 (303, 1)	8.51876 (303, 1)
170.0 /	10.21720 (363, 2)	9.82475 (363, 2)	8.03164 (288, 2)	7.59148 (288, 2)	6.35262 (302, 3)
160.0 /	12.05902 (289, 2)	10.11437 (289, 2)	11.70099 (5, 2)	12.57660 (5, 2)	11.07197 (5, 2)
150.0 /	12.35705 (169, 2)	11.27529 (169, 2)	8.80551 (169, 2)	8.03992C(54, 2)	7.52379C(54, 2)
140.0 /	9.78902 (142, 2)	8.73235 (200, 2)	7.51940 (103, 2)	5.77604 (103, 2)	4.67815 (303, 1)
130.0 /	10.30221C(246, 2)	9.33357 (103, 2)	7.78234 (229, 2)	7.49467 (27, 1)	6.72286C(141, 3)
120.0 /	10.77025 (229, 2)	10.70805 (229, 2)	8.90950 (229, 2)	8.34974C(277, 3)	8.15917C(277, 3)
110.0 /	12.36503 (229, 2)	12.66234C(359, 2)	11.01006C(177, 3)	8.18323C(177, 3)	8.63848C(229, 3)
100.0 /	14.86342 (227, 2)	13.67835 (229, 2)	11.08633 (229, 2)	9.45641C(160, 3)	7.78547C(160, 3)
90.0 /	21.52726C(278, 2)	17.03423C(278, 2)	12.74895 (227, 2)	8.47543 (227, 2)	5.85369 (184, 2)
80.0 /	18.50739C(278, 2)	14.53485C(278, 2)	9.99912C(278, 2)	9.36836C(282, 3)	10.12263C(282, 3)
70.0 /	17.86029 (171, 2)	14.37060 (171, 2)	10.07581 (171, 2)	8.95812 (98, 3)	9.10223 (98, 3)
60.0 /	17.73730 (171, 2)	15.10862 (171, 2)	11.19845 (171, 2)	8.12149 (212, 1)	7.60646 (212, 1)
50.0 /	13.11898 (199, 2)	10.36353 (199, 2)	9.00765 (3, 3)	8.90737 (3, 3)	7.68509 (3, 3)
40.0 /	14.15742C(170, 2)	12.66251C(170, 2)	9.68449C(170, 2)	8.09412C(25, 2)	6.76428 (49, 2)
30.0 /	12.58655 (214, 2)	10.89948C(170, 2)	11.54807 (185, 2)	10.86781 (185, 2)	9.23366 (210, 3)
20.0 /	15.53892 (214, 2)	12.22664 (214, 2)	10.08119 (321, 2)	9.31829 (52, 2)	7.94305 (52, 2)
10.0 /	11.96984 (102, 2)	10.55378 (102, 2)	8.79416 (70, 2)	7.11107 (346, 2)	5.98794C(39, 3)
360.0 /	10.83970 (206, 2)	9.30240 (206, 2)	8.61440 (345, 2)	9.36539 (345, 2)	9.28618C(52, 1)

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HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 21.52726 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	5.97787 (358, 1)	4.79365 (358, 1)	4.25476 (37, 1)	3.55185 (37, 1)	1.80525C(30, 1)
340.0 /	8.41349 (232, 3)	6.70144 (232, 3)	5.10193 (232, 3)	3.67456 (232, 3)	1.62058C(164, 1)
330.0 /	8.57294 (41, 1)	7.30360 (41, 1)	5.95535 (41, 1)	5.05003C(205, 1)	2.72573C(205, 1)
320.0 /	9.40086 (75, 1)	7.38917 (75, 1)	5.59997 (75, 1)	4.02809 (75, 1)	1.96506 (139, 1)
310.0 /	8.55026C(241, 1)	7.08833C(241, 1)	6.07843 (71, 1)	5.59305 (71, 1)	3.14690 (71, 1)
300.0 /	6.55601 (169, 3)	6.85909 (272, 3)	6.61083 (272, 3)	5.72713 (272, 3)	3.10386C(198, 1)
290.0 /	8.54177 (333, 1)	6.73258 (333, 1)	6.99591C(257, 1)	6.46187C(257, 1)	3.60088C(257, 1)
280.0 /	9.33509C(174, 1)	8.72500C(174, 1)	7.56992C(174, 1)	6.07456C(174, 1)	2.98202C(288, 1)
270.0 /	8.92511 (132, 1)	7.08683 (132, 1)	5.40776 (132, 1)	4.55691C(137, 1)	2.24157C(137, 1)
260.0 /	6.06489C(281, 1)	6.43376 (315, 1)	6.42900 (315, 1)	5.65647 (315, 1)	2.94706 (315, 1)
250.0 /	8.97452 (351, 1)	8.67104 (263, 1)	8.72153 (263, 1)	7.72988 (263, 1)	4.10361 (263, 1)
240.0 /	9.76952C(188, 1)	7.68561C(188, 1)	6.23209 (261, 1)	5.37301 (261, 1)	2.76529 (261, 1)
230.0 /	7.18149 (340, 3)	5.75443 (89, 1)	6.15590 (89, 1)	5.71083 (89, 1)	3.25034 (89, 1)
220.0 /	10.15048 (361, 2)	7.36501 (361, 2)	5.82112 (294, 1)	5.33079 (294, 1)	2.94822 (294, 1)
210.0 /	6.60726 (301, 2)	4.80215 (361, 3)	4.85801 (361, 3)	4.37173 (361, 3)	2.40452 (361, 3)
200.0 /	8.69321 (306, 2)	6.38052 (306, 2)	4.58084 (306, 2)	3.13722 (306, 2)	1.30027 (363, 1)

190.0 /	5.76108 (307, 1)	4.69037C(113, 1)	4.98869C(113, 1)	4.63185C(113, 1)	2.66208C(113, 1)
180.0 /	6.88404 (303, 1)	5.06097 (303, 1)	3.62698 (303, 1)	3.04301 (307, 3)	1.62788 (307, 3)
170.0 /	5.32342C(194, 3)	4.10684C(194, 3)	3.06324C(194, 3)	2.23642 (279, 3)	1.24677C(25, 3)
160.0 /	8.75249 (5, 2)	6.37390 (5, 2)	4.56861 (5, 2)	3.13667 (5, 2)	1.50517C(119, 3)
150.0 /	6.39878C(127, 3)	5.64983C(127, 3)	4.73131C(127, 3)	3.70393C(127, 3)	1.69584C(115, 3)
140.0 /	4.29794 (133, 3)	3.57747 (133, 3)	3.39182C(121, 3)	3.07335C(121, 3)	1.66575C(121, 3)
130.0 /	7.07969C(141, 3)	6.86757C(141, 3)	6.11995C(141, 3)	4.98931C(141, 3)	2.77448C(64, 1)
120.0 /	7.06163 (336, 3)	5.66952 (336, 3)	4.32997 (336, 3)	3.12777 (128, 3)	1.79604C(38, 3)
110.0 /	8.41892C(229, 3)	7.24277C(229, 3)	6.10814C(351, 3)	5.38692C(351, 3)	2.78545C(351, 3)
100.0 /	6.19182C(163, 3)	5.41973 (112, 1)	5.63674 (112, 1)	5.07243 (112, 1)	2.74331 (112, 1)
90.0 /	4.57847C(219, 3)	3.36350C(219, 3)	3.23557C(213, 1)	3.06278C(213, 1)	1.79604C(213, 1)
80.0 /	9.27735C(282, 3)	7.63533C(282, 3)	5.96775C(282, 3)	4.39483C(282, 3)	1.82338C(309, 3)
70.0 /	7.94855 (98, 3)	6.26112 (98, 3)	4.73464 (98, 3)	3.49751 (184, 1)	1.61734 (184, 1)
60.0 /	6.36890 (212, 1)	4.86844 (212, 1)	4.11825 (183, 1)	3.82512 (183, 1)	2.16774 (183, 1)
50.0 /	6.00861 (3, 3)	4.91972 (53, 3)	4.26255 (53, 3)	3.41581 (53, 3)	1.60315C(62, 1)
40.0 /	5.18383 (49, 2)	4.52642C(231, 1)	4.99710C(231, 1)	4.67605C(231, 1)	2.64878C(231, 1)
30.0 /	7.42373 (210, 3)	5.47137 (210, 3)	3.94643 (210, 3)	3.31939 (37, 3)	1.74164 (191, 3)
20.0 /	7.63306 (4, 3)	7.02327 (4, 3)	5.97408 (4, 3)	4.70063 (4, 3)	2.03171 (4, 3)
10.0 /	5.77332 (50, 1)	6.06537 (50, 1)	5.66705 (50, 1)	4.78913 (50, 1)	2.35217 (50, 1)
360.0 /	8.40177C(52, 1)	6.80138C(52, 1)	5.24413C(52, 1)	3.81863C(52, 1)	1.52333 (36, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 18.29169 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 313.0	407.0	532.0	720.0	939.0
350.0 /	7.75201 (75, 2)	7.34325 (206, 2)	6.40040 (1, 1)	6.89566 (357, 3)	6.28033 (4, 2)
340.0 /	10.10504 (281, 2)	8.87641 (232, 2)	6.85771 (232, 3)	7.68541C(103, 1)	7.15804C(103, 1)
330.0 /	9.54606 (281, 2)	8.27344 (29, 2)	7.00300 (232, 2)	8.47321 (249, 2)	8.28402 (249, 2)
320.0 /	10.86807 (272, 2)	9.98288 (329, 2)	8.49530 (286, 2)	7.69480 (225, 1)	7.83680 (299, 1)
310.0 /	14.97011 (328, 2)	15.06990 (328, 2)	12.22336 (286, 2)	9.93287 (331, 1)	9.32062 (331, 1)
300.0 /	17.74703 (286, 2)	14.26618 (238, 2)	10.00379 (238, 2)	6.61121 (286, 2)	6.81494 (145, 3)
290.0 /	15.66801 (238, 2)	11.93468 (238, 2)	9.23758 (353, 2)	9.77715 (333, 1)	9.38827 (343, 1)
280.0 /	13.56357 (327, 2)	14.09698 (327, 2)	11.25159 (315, 2)	8.24600 (186, 3)	7.86110 (165, 3)
270.0 /	15.12668C(235, 2)	12.80223 (188, 2)	10.86154 (314, 2)	9.80863 (69, 1)	8.29022 (69, 1)
260.0 /	16.28392 (260, 2)	13.44829 (260, 2)	9.67061 (260, 2)	8.17587 (258, 2)	6.48064 (9, 3)
250.0 /	16.15123 (258, 2)	14.45296 (258, 2)	11.08126 (258, 2)	10.33471C(364, 3)	10.05907C(364, 3)
240.0 /	15.54499C(245, 2)	15.53206 (292, 2)	12.82644 (292, 2)	11.24758 (9, 1)	9.77663 (9, 1)
230.0 /	12.38412 (292, 2)	10.91590 (361, 2)	11.41657 (361, 2)	9.94366 (361, 2)	7.78296 (361, 2)
220.0 /	9.27230 (88, 2)	10.25513 (362, 2)	10.85631 (293, 2)	10.45281 (300, 2)	9.40806 (300, 2)
210.0 /	12.26244 (293, 2)	12.34275 (294, 2)	11.79979 (294, 2)	10.15171 (294, 2)	8.17067 (294, 2)
200.0 /	8.52671 (107, 2)	8.37672 (87, 2)	7.60259 (87, 2)	8.05867C(24, 1)	7.53758C(24, 1)
190.0 /	8.34138 (289, 2)	8.47708 (11, 2)	7.92490 (11, 2)	6.90904C(237, 3)	5.46580 (339, 1)
180.0 /	8.86171 (236, 2)	8.64625C(237, 3)	7.87055 (303, 1)	8.20546 (236, 2)	6.93622 (236, 2)
170.0 /	9.89128 (44, 2)	8.80834 (44, 2)	7.92729 (363, 2)	7.06094 (302, 3)	6.35140 (288, 2)
160.0 /	10.36109 (169, 2)	9.15228 (169, 2)	7.26782 (289, 2)	6.09770C(25, 2)	5.63048C(25, 2)
150.0 /	11.51524 (289, 2)	9.85013 (289, 2)	7.26724C(203, 3)	7.27030C(60, 1)	6.75078C(127, 3)
140.0 /	9.64188 (200, 2)	8.54474 (103, 2)	6.80183 (200, 2)	5.07119 (346, 3)	4.64589 (346, 3)
130.0 /	9.80251 (142, 2)	9.03572 (229, 2)	7.59415 (103, 2)	6.53920C(54, 2)	6.51036 (27, 1)
120.0 /	8.01597C(189, 3)	9.09393C(189, 3)	8.25585 (20, 2)	7.41200 (336, 3)	7.86527 (336, 3)

110.0 /	11.71821C(359, 2)	12.24101C(177, 3)	11.00761C(359, 2)	7.99358C(359, 2)	6.23754C(191, 1)
100.0 /	14.55937 (129, 2)	13.57863 (227, 2)	10.57187 (227, 2)	8.36379C(197, 3)	7.23889C(163, 3)
90.0 /	18.29169 (227, 2)	16.49120 (227, 2)	11.81254C(278, 2)	7.88639 (184, 2)	5.72631C(219, 3)
80.0 /	14.25623 (276, 2)	12.19801 (276, 2)	9.07705 (62, 2)	6.31187 (183, 1)	6.66813 (183, 1)
70.0 /	16.54515 (277, 2)	13.61238 (277, 2)	9.70307 (277, 2)	6.95088 (51, 3)	6.50872 (51, 3)
60.0 /	16.21626 (277, 2)	14.13756 (277, 2)	10.62509 (277, 2)	7.19539 (171, 2)	5.72788 (58, 3)
50.0 /	10.00023 (250, 2)	8.92406 (4, 2)	7.53464C(351, 2)	6.71993 (322, 2)	6.57099C(229, 1)
40.0 /	13.09675 (199, 2)	10.81021 (199, 2)	9.20656C(25, 2)	8.05774 (49, 2)	6.43585C(25, 2)
30.0 /	12.38101C(195, 2)	10.61241 (185, 2)	9.19361 (210, 3)	10.22957 (210, 3)	9.06796 (185, 2)
20.0 /	11.68798 (321, 2)	12.01050 (321, 2)	9.92677 (70, 2)	8.32521 (70, 2)	7.39813 (4, 3)
10.0 /	11.00664 (70, 2)	10.34968 (70, 2)	8.04338 (346, 2)	6.64249 (70, 2)	5.67541 (346, 2)
360.0 /	9.71856 (139, 2)	8.54021 (139, 2)	8.02656 (299, 2)	8.57432C(52, 1)	8.28422 (345, 2)

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2ND HIGH
8-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 18.29169 AND OCCURRED AT (313.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	5.26296 (4, 2)	4.58169 (37, 1)	3.66961 (358, 1)	3.01467 (161, 3)	1.68755 (37, 1)
340.0 /	5.84346C(103, 1)	4.35718C(103, 1)	3.48998C(164, 1)	3.10976C(164, 1)	1.46125 (160, 1)
330.0 /	6.96256 (249, 2)	5.87737 (215, 1)	5.63108C(205, 1)	4.55933 (41, 1)	2.14686 (36, 1)
320.0 /	7.65462 (299, 1)	6.53413 (299, 1)	5.20789 (299, 1)	3.89633 (299, 1)	1.91979 (150, 1)
310.0 /	7.84494 (171, 1)	5.89300 (171, 1)	5.56677C(241, 1)	4.30354 (160, 1)	2.24076 (160, 1)
300.0 /	6.47904 (272, 3)	5.81240C(215, 3)	6.02304C(198, 1)	5.56277C(198, 1)	2.93328 (272, 3)
290.0 /	7.74129 (343, 1)	6.45827C(257, 1)	6.57097C(267, 1)	6.03663C(267, 1)	3.31613C(267, 1)
280.0 /	7.46603 (165, 3)	6.55212 (187, 1)	6.07139 (187, 1)	5.21888C(288, 1)	2.77924C(174, 1)
270.0 /	6.68009C(2, 1)	5.75673C(137, 1)	5.39796C(137, 1)	3.91837 (132, 1)	1.84305C(286, 1)
260.0 /	5.87753 (69, 1)	6.11627C(245, 1)	5.89959C(245, 1)	5.10864C(245, 1)	2.63872C(245, 1)
250.0 /	8.41186C(364, 3)	6.71566 (351, 1)	5.39823 (251, 1)	4.81460 (251, 1)	2.55306 (251, 1)
240.0 /	7.61916 (9, 1)	6.48927 (261, 1)	5.82587C(188, 1)	4.92117 (251, 1)	2.46984 (251, 1)
230.0 /	6.23841 (292, 3)	5.61383 (340, 3)	4.95101 (303, 3)	4.08144 (303, 3)	2.09361 (21, 1)
220.0 /	7.43941 (300, 2)	6.31067 (292, 1)	5.25927 (361, 2)	4.59382C(293, 1)	2.49011C(293, 1)
210.0 /	6.12663 (294, 2)	4.64672 (301, 2)	3.23837 (301, 2)	2.23669C(176, 1)	1.28165 (33, 3)
200.0 /	6.16581C(24, 1)	4.60338C(24, 1)	3.35487C(24, 1)	2.56361 (363, 1)	1.20481C(14, 1)
190.0 /	4.62053C(288, 3)	4.21855 (307, 1)	4.04656C(157, 1)	3.64446C(157, 1)	1.99675C(157, 1)
180.0 /	5.39052 (236, 2)	3.88508 (236, 2)	3.39307 (307, 3)	2.60945C(282, 3)	1.49101C(282, 3)
170.0 /	5.04051 (302, 3)	3.65148 (302, 3)	2.59087 (302, 3)	2.17106C(194, 3)	1.20631 (279, 3)
160.0 /	4.58275C(25, 2)	3.58955 (316, 3)	2.88529 (316, 3)	2.50927C(119, 3)	1.41866C(117, 1)
150.0 /	6.15710C(54, 2)	4.59861C(54, 2)	3.68832C(115, 3)	3.23686C(115, 3)	1.62909C(127, 3)
140.0 /	3.99256 (303, 1)	3.53485 (99, 3)	3.28118 (196, 3)	2.89895 (196, 3)	1.49495 (354, 3)
130.0 /	5.45814C(278, 3)	4.55944 (200, 3)	4.07576C(64, 1)	4.18745C(64, 1)	2.30312C(141, 3)
120.0 /	7.03353C(277, 3)	5.51758C(277, 3)	4.17158C(277, 3)	3.11856 (336, 3)	1.61646 (201, 1)
110.0 /	5.32342C(191, 1)	6.09528C(351, 3)	5.82196C(229, 3)	4.38156C(229, 3)	2.22068C(59, 1)
100.0 /	5.90798C(160, 3)	4.88550C(163, 3)	3.73464C(163, 3)	2.71884C(163, 3)	1.16109C(213, 1)
90.0 /	4.34100C(168, 2)	3.24135 (63, 3)	2.54666 (63, 3)	2.13075C(76, 3)	1.24819C(13, 1)
80.0 /	6.41130 (183, 1)	5.72588 (183, 1)	4.83136 (183, 1)	3.80258 (183, 1)	1.70370C(282, 3)
70.0 /	5.37798 (184, 1)	5.02640 (184, 1)	4.35808 (184, 1)	3.39724 (98, 3)	1.32416 (181, 3)
60.0 /	4.74767 (58, 3)	4.32661 (50, 3)	3.77848 (50, 3)	3.05075 (50, 3)	1.40877 (50, 3)
50.0 /	5.78561C(229, 1)	4.68120 (211, 1)	3.83960 (211, 1)	3.07048C(70, 3)	1.58717C(70, 3)
40.0 /	4.90855 (75, 3)	3.83684C(329, 3)	3.64516C(159, 1)	3.27463C(159, 1)	1.73749C(159, 1)

30.0 /	6.95083 (185, 2)	4.94655 (185, 2)	3.92244 (37, 3)	3.17677 (191, 3)	1.62155 (37, 3)
20.0 /	6.13905 (52, 2)	4.94645 (70, 1)	3.96257 (70, 1)	2.98115 (70, 1)	1.21118 (70, 1)
10.0 /	5.14102C(39, 3)	4.06363C(354, 1)	3.72834C(354, 1)	3.10411C(354, 1)	1.49148C(354, 1)
360.0 /	6.57139 (345, 2)	4.80356 (345, 2)	3.70221 (36, 3)	3.14256 (36, 3)	1.45215C(52, 1)

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HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.14861 AND OCCURRED AT (720.0, 220.0) *

DIRECTION / (DEGREES) /	313.0	407.0	RANGE (METERS) 532.0	720.0	939.0
350.0 /	3.49922C(206, 1)	3.79756C(206, 1)	3.82337C(1, 1)	3.78043 (232, 1)	3.32354 (232, 1)
340.0 /	4.73218C(194, 1)	4.27532 (232, 1)	4.93149 (232, 1)	5.01011 (232, 1)	4.53941 (232, 1)
330.0 /	4.00061 (148, 1)	3.77985C(329, 1)	4.42008 (41, 1)	4.55187 (41, 1)	4.19034 (41, 1)
320.0 /	4.52631C(286, 1)	4.72067C(215, 1)	4.35908C(215, 1)	3.77253C(215, 1)	3.95064C(335, 1)
310.0 /	6.85022C(286, 1)	5.95077C(286, 1)	4.89583 (77, 1)	4.79238 (77, 1)	4.11180 (77, 1)
300.0 /	7.95215C(238, 1)	6.61946C(238, 1)	4.97108C(238, 1)	4.34268C(353, 1)	4.34336C(353, 1)
290.0 /	6.96524C(238, 1)	5.31856C(238, 1)	4.15910C(135, 1)	4.40572C(353, 1)	4.37908C(353, 1)
280.0 /	6.83486C(188, 1)	5.70321C(188, 1)	4.75020C(94, 1)	3.98023 (327, 1)	4.22610C(165, 1)
270.0 /	7.88458C(235, 1)	8.27366C(235, 1)	7.61325C(235, 1)	6.21032C(235, 1)	4.92719 (312, 1)
260.0 /	6.33885C(188, 1)	5.93068 (258, 1)	4.95885 (258, 1)	3.84750 (296, 1)	3.12822 (296, 1)
250.0 /	7.23588 (260, 1)	6.94661 (260, 1)	6.07952 (260, 1)	5.45712C(351, 1)	4.90890C(351, 1)
240.0 /	6.03837 (89, 1)	6.17591 (89, 1)	5.52864 (89, 1)	5.97786 (318, 1)	5.40398 (318, 1)
230.0 /	7.13718C(293, 1)	7.06062C(293, 1)	6.05152C(293, 1)	6.01728 (8, 1)	5.13840 (8, 1)
220.0 /	7.29622C(293, 1)	6.47016C(293, 1)	7.94219 (361, 1)	9.14861 (361, 1)	8.65628 (361, 1)
210.0 /	5.45001C(293, 1)	5.15254C(12, 1)	4.17860C(12, 1)	4.11595C(301, 1)	3.68172C(301, 1)
200.0 /	4.24332 (325, 1)	3.72299C(87, 1)	4.78119 (306, 1)	5.60150 (306, 1)	5.15428 (306, 1)
190.0 /	3.02095C(237, 1)	3.83343 (11, 1)	3.99651 (11, 1)	3.48267 (11, 1)	2.82933 (81, 1)
180.0 /	3.93854C(236, 1)	4.03676C(236, 1)	3.97925C(236, 1)	4.54711 (303, 1)	4.30078 (303, 1)
170.0 /	3.82743C(44, 1)	3.46102C(44, 1)	3.56962C(288, 1)	3.37399C(288, 1)	2.89779 (302, 1)
160.0 /	4.03254 (289, 1)	3.43375 (289, 1)	4.10674C(5, 1)	4.43600C(5, 1)	3.92643C(5, 1)
150.0 /	4.63600 (169, 1)	4.30595 (169, 1)	3.64995 (43, 1)	3.40599 (43, 1)	3.08369C(60, 1)
140.0 /	5.59346C(142, 1)	5.47398C(161, 1)	4.95142C(161, 1)	3.82298C(161, 1)	2.78888C(161, 1)
130.0 /	4.63589C(200, 1)	4.70726C(200, 1)	4.29385C(200, 1)	3.84446 (27, 1)	3.28400 (27, 1)
120.0 /	4.19302C(229, 1)	4.56670C(229, 1)	4.96918C(20, 1)	4.96882C(20, 1)	4.37938C(20, 1)
110.0 /	4.79825C(229, 1)	4.87419C(229, 1)	4.64770C(229, 1)	4.41042C(229, 1)	4.11137C(229, 1)
100.0 /	7.29270C(227, 1)	7.16938C(160, 1)	6.49301C(160, 1)	5.13143C(160, 1)	3.85506C(160, 1)
90.0 /	7.75659C(227, 1)	6.99887C(227, 1)	5.41356C(227, 1)	3.68251C(158, 1)	3.46125C(65, 1)
80.0 /	6.16913C(278, 1)	4.90670C(277, 1)	4.44722 (183, 1)	4.06247 (183, 1)	3.60530 (183, 1)
70.0 /	7.35340C(277, 1)	6.04994C(277, 1)	5.05857 (202, 1)	4.41083C(98, 1)	4.23540C(98, 1)
60.0 /	7.20723C(277, 1)	6.28336C(277, 1)	4.72226C(277, 1)	4.54414 (58, 1)	4.13139 (58, 1)
50.0 /	5.24759C(199, 1)	4.14541C(199, 1)	4.08693C(3, 1)	3.73516 (51, 1)	3.57386 (51, 1)
40.0 /	5.23870C(199, 1)	4.32409C(199, 1)	3.72750C(49, 1)	3.70210C(49, 1)	3.14064C(49, 1)
30.0 /	7.00831C(214, 1)	6.02340C(214, 1)	5.21015 (185, 1)	5.64566 (185, 1)	5.28610 (185, 1)
20.0 /	7.19573C(214, 1)	5.83967C(214, 1)	4.68381C(70, 1)	4.74097C(70, 1)	4.37151C(70, 1)
10.0 /	5.04511C(102, 1)	4.47512C(102, 1)	4.03368 (37, 1)	3.85457 (37, 1)	3.20734 (37, 1)
360.0 /	4.56873C(206, 1)	3.92856C(206, 1)	3.30333C(210, 1)	3.49284 (345, 1)	3.38847C(52, 1)

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HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9.14861 AND OCCURRED AT (720.0, 220.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1221.0	1628.0	2128.0	2817.0	6000.0
350.0 /	2.67376C(52, 1)	1.95455C(52, 1)	1.52522 (37, 1)	1.33985C(161, 1)	.71802C(161, 1)
340.0 /	3.72259 (232, 1)	2.80351 (232, 1)	2.05864 (232, 1)	1.44219 (232, 1)	.60201C(73, 1)
330.0 /	3.57548 (41, 1)	2.87905 (41, 1)	2.26459 (41, 1)	1.86915C(205, 1)	1.00557C(205, 1)
320.0 /	3.67581C(335, 1)	3.05113C(335, 1)	2.39218C(335, 1)	1.76262C(335, 1)	.73256C(215, 1)
310.0 /	3.22300 (77, 1)	2.40063C(241, 1)	2.13860 (71, 1)	1.93076 (71, 1)	1.07299 (71, 1)
300.0 /	3.91658C(353, 1)	3.32643C(353, 1)	2.73912C(353, 1)	2.19903 (272, 1)	1.07564 (272, 1)
290.0 /	3.83818C(353, 1)	3.06635C(353, 1)	2.35380C(353, 1)	1.97360C(270, 1)	1.02369C(257, 1)
280.0 /	3.84465C(165, 1)	3.12079C(165, 1)	2.40588C(165, 1)	1.92706 (223, 1)	.99401C(288, 1)
270.0 /	4.35577 (312, 1)	3.64876 (312, 1)	2.95221 (312, 1)	2.24652 (312, 1)	1.05782C(286, 1)
260.0 /	2.68512C(245, 1)	2.60847C(245, 1)	2.61512 (242, 1)	2.34725 (242, 1)	1.23125 (242, 1)
250.0 /	4.04488 (263, 1)	4.62300 (263, 1)	4.58122 (263, 1)	4.02591 (263, 1)	2.11167 (263, 1)
240.0 /	4.45078 (318, 1)	3.42069 (318, 1)	2.57756 (318, 1)	2.07720C(251, 1)	1.00170C(251, 1)
230.0 /	4.00088 (292, 1)	3.32616 (292, 1)	2.64866 (292, 1)	2.05295 (89, 1)	1.11818 (89, 1)
220.0 /	7.27172 (361, 1)	5.60107 (361, 1)	4.19055 (361, 1)	2.98310 (361, 1)	1.09316 (361, 1)
210.0 /	2.98105C(301, 1)	2.22635C(301, 1)	1.84312 (361, 1)	1.60401 (361, 1)	.84555 (361, 1)
200.0 /	4.16237 (306, 1)	3.06843 (306, 1)	2.21133 (306, 1)	1.52029 (306, 1)	.51679C(44, 1)
190.0 /	2.24569 (289, 1)	1.94587C(113, 1)	2.09712C(113, 1)	1.96366C(113, 1)	1.13816C(113, 1)
180.0 /	3.55095 (303, 1)	2.66356 (303, 1)	1.93971 (303, 1)	1.34295 (303, 1)	.55719 (307, 1)
170.0 /	2.46677 (302, 1)	1.90449 (302, 1)	1.42027 (302, 1)	1.03269C(279, 1)	.54483C(279, 1)
160.0 /	3.11617C(5, 1)	2.27503C(5, 1)	1.63192C(5, 1)	1.11982C(5, 1)	.59050C(119, 1)
150.0 /	2.72789C(60, 1)	2.33527C(60, 1)	1.96897C(60, 1)	1.57432C(60, 1)	.73683C(60, 1)
140.0 /	1.94124 (27, 1)	1.61921 (99, 1)	1.39582 (99, 1)	1.13229C(121, 1)	.61370C(121, 1)
130.0 /	2.64196C(229, 1)	2.20254C(200, 1)	1.97898C(13, 1)	1.72998C(13, 1)	.95200C(64, 1)
120.0 /	3.53815C(20, 1)	2.65357C(20, 1)	1.95353C(20, 1)	1.46711 (66, 1)	.87242 (66, 1)
110.0 /	3.53497C(229, 1)	3.09777C(228, 1)	2.78045C(228, 1)	2.30229C(228, 1)	1.12589C(228, 1)
100.0 /	2.74513C(160, 1)	1.82504C(160, 1)	1.87896 (112, 1)	1.69083 (112, 1)	.91444 (112, 1)
90.0 /	2.86286C(65, 1)	2.15863C(65, 1)	1.69058 (201, 1)	1.36100 (201, 1)	.66478C(213, 1)
80.0 /	3.06926 (183, 1)	2.49489 (183, 1)	1.98361 (183, 1)	1.49671 (183, 1)	.62435 (183, 1)
70.0 /	3.59317C(98, 1)	2.77648C(98, 1)	2.07525C(98, 1)	1.50702 (183, 1)	.66718 (183, 1)
60.0 /	3.37908 (58, 1)	2.63194 (322, 1)	2.11135 (322, 1)	1.58271 (322, 1)	.82405 (183, 1)
50.0 /	3.09453 (51, 1)	2.51139 (51, 1)	1.98180 (51, 1)	1.48752C(53, 1)	.66333C(53, 1)
40.0 /	2.56751C(231, 1)	2.51166C(231, 1)	2.31338C(231, 1)	1.95417C(231, 1)	.97664C(231, 1)
30.0 /	4.42596 (185, 1)	3.39975 (185, 1)	2.53951 (185, 1)	1.80956 (185, 1)	.70142C(191, 1)
20.0 /	3.66713C(70, 1)	2.98299 (4, 1)	2.43348 (4, 1)	1.85934 (4, 1)	.76895 (4, 1)
10.0 /	2.44098 (37, 1)	2.18351 (50, 1)	1.98902 (50, 1)	1.65623 (50, 1)	.79941 (50, 1)
360.0 /	2.99062C(52, 1)	2.37153C(52, 1)	1.86504 (36, 1)	1.56122 (36, 1)	.74700 (36, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 8.63953 AND OCCURRED AT (720.0, 220.0) *

DIRECTION / (DEGREES) /	313.0	407.0	RANGE (METERS) 532.0	720.0	939.0
350.0 /	3.13260 (126, 1)	3.40820C(1, 1)	3.71175C(206, 1)	3.59843C(1, 1)	3.31439C(52, 1)
340.0 /	3.84954C(281, 1)	4.05679C(194, 1)	3.94600C(1, 1)	3.77738C(1, 1)	3.14152C(1, 1)
330.0 /	3.63659C(281, 1)	3.75627 (41, 1)	3.33913C(329, 1)	3.76587C(249, 1)	3.68179C(249, 1)
320.0 /	4.39670C(215, 1)	4.05273C(286, 1)	3.89605 (224, 1)	3.70880 (75, 1)	3.76518 (344, 1)
310.0 /	5.22365C(132, 1)	5.20622 (328, 1)	4.86184 (72, 1)	4.76785 (72, 1)	3.97943 (72, 1)
300.0 /	6.65147C(189, 1)	5.77802 (272, 1)	4.84792 (272, 1)	4.07868C(193, 1)	3.72529 (69, 1)
290.0 /	5.44272C(189, 1)	4.51348 (147, 1)	4.04783 (147, 1)	3.84756C(343, 1)	3.54751C(343, 1)
280.0 /	5.77659 (315, 1)	5.15483C(94, 1)	4.54751 (327, 1)	3.87957C(165, 1)	3.52930C(2, 1)
270.0 /	7.00595C(188, 1)	5.49829C(188, 1)	5.58299C(154, 1)	5.35523C(154, 1)	4.82391C(235, 1)
260.0 /	6.27044 (258, 1)	5.14236C(235, 1)	4.37697C(168, 1)	3.66369 (258, 1)	3.03266C(178, 1)
250.0 /	6.45294C(271, 1)	6.13667C(271, 1)	5.02330C(351, 1)	4.98413 (260, 1)	4.24040 (260, 1)
240.0 /	5.67492C(264, 1)	5.89497C(264, 1)	5.51751 (318, 1)	5.34014 (9, 1)	4.63985 (9, 1)
230.0 /	4.39804 (292, 1)	4.41862 (292, 1)	5.85736 (8, 1)	5.21098 (340, 1)	4.69069 (340, 1)
220.0 /	4.35062 (88, 1)	5.36090 (361, 1)	7.06069C(300, 1)	8.63953C(300, 1)	8.32138C(300, 1)
210.0 /	5.33311C(12, 1)	4.73131C(293, 1)	3.96299C(301, 1)	3.42727 (294, 1)	2.86762 (294, 1)
200.0 /	3.76833C(87, 1)	3.70650 (325, 1)	3.37893C(87, 1)	3.83644 (303, 1)	3.65806 (303, 1)
190.0 /	3.01767 (11, 1)	3.37572 (81, 1)	3.57693 (81, 1)	3.32081 (81, 1)	2.78455 (11, 1)
180.0 /	3.41985C(288, 1)	3.60814 (81, 1)	3.80620 (81, 1)	3.64687C(236, 1)	3.08276C(236, 1)
170.0 /	3.65650C(177, 1)	3.27493 (363, 1)	2.68147C(44, 1)	2.95154 (302, 1)	2.82284C(288, 1)
160.0 /	3.56341C(177, 1)	3.11294 (43, 1)	3.12150 (43, 1)	2.70701 (43, 1)	2.16851 (43, 1)
150.0 /	4.05589 (289, 1)	3.78778 (289, 1)	3.39706 (169, 1)	3.32416C(54, 1)	3.07695C(54, 1)
140.0 /	5.08352C(161, 1)	4.76527C(142, 1)	3.59138C(142, 1)	2.59675 (27, 1)	2.35325 (27, 1)
130.0 /	4.49444C(142, 1)	4.13167C(236, 1)	3.74233 (27, 1)	3.58990C(200, 1)	3.09060C(229, 1)
120.0 /	3.87434C(236, 1)	4.39593C(228, 1)	4.67333C(228, 1)	4.11951C(228, 1)	3.25115C(228, 1)
110.0 /	4.49097C(129, 1)	4.70737C(359, 1)	4.23592C(359, 1)	3.82669C(191, 1)	3.48345C(191, 1)
100.0 /	6.81739C(160, 1)	7.07729C(227, 1)	5.94693C(227, 1)	4.34072C(227, 1)	3.06521C(227, 1)
90.0 /	7.17575C(278, 1)	5.99627C(158, 1)	5.02034C(158, 1)	3.67993C(65, 1)	2.68943 (201, 1)
80.0 /	5.85966C(171, 1)	4.84495C(278, 1)	3.96799C(98, 1)	3.40750C(282, 1)	3.38286C(282, 1)
70.0 /	7.30398C(171, 1)	5.96650C(171, 1)	4.31248C(277, 1)	4.22020 (202, 1)	3.40349 (202, 1)
60.0 /	6.77554C(171, 1)	5.77198C(171, 1)	4.27760C(171, 1)	3.21956 (50, 1)	3.37717 (322, 1)
50.0 /	4.44454C(250, 1)	4.03834C(3, 1)	3.43816 (58, 1)	3.67218C(3, 1)	3.02557C(211, 1)
40.0 /	4.71914C(170, 1)	4.22084C(170, 1)	3.67795 (63, 1)	3.36229C(25, 1)	2.92669C(358, 1)
30.0 /	4.59599C(240, 1)	4.25766 (185, 1)	4.49347C(214, 1)	4.28211C(52, 1)	4.14516C(52, 1)
20.0 /	4.85871C(240, 1)	4.27898C(70, 1)	4.13822C(214, 1)	4.29860C(52, 1)	3.72996C(52, 1)
10.0 /	4.00745C(206, 1)	3.63593C(70, 1)	3.47344C(102, 1)	2.47460C(70, 1)	2.39266C(39, 1)
360.0 /	3.92668C(234, 1)	3.23472C(1, 1)	3.22239C(1, 1)	3.44873C(210, 1)	3.08580 (345, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWT Case 1--1986 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 8.63953 AND OCCURRED AT (720.0, 220.0) *

DIRECTION / (DEGREES) /	1221.0	1628.0	RANGE (METERS) 2128.0	2817.0	6000.0
350.0 /	2.61234 (232, 1)	1.90082 (4, 1)	1.51183C(161, 1)	1.26190 (37, 1)	.59624 (37, 1)
340.0 /	2.52212 (334, 1)	1.93827C(73, 1)	1.66112C(73, 1)	1.32456C(73, 1)	.55673C(160, 1)
330.0 /	3.09447C(249, 1)	2.41863C(215, 1)	2.09109C(205, 1)	1.68979 (41, 1)	.72841 (36, 1)
320.0 /	3.36989 (344, 1)	2.71957C(225, 1)	2.22469C(225, 1)	1.70788C(225, 1)	.72220C(225, 1)

310.0 /	3.12544 (69, 1)	2.33754 (147, 1)	1.98159 (147, 1)	1.69162C(160, 1)	.87258C(160, 1)
300.0 /	3.45661C(145, 1)	2.87886C(145, 1)	2.62253 (272, 1)	2.13101C(353, 1)	.95338C(198, 1)
290.0 /	3.06760 (224, 1)	2.49024 (224, 1)	2.26512C(270, 1)	1.92590C(257, 1)	1.00026C(270, 1)
280.0 /	2.93417 (311, 1)	2.50673C(174, 1)	2.21979 (223, 1)	1.81644C(297, 1)	.96183 (223, 1)
270.0 /	3.53628C(235, 1)	2.78115C(132, 1)	2.16697 (134, 1)	1.92304C(286, 1)	.92878 (312, 1)
260.0 /	2.53422 (305, 1)	2.56880 (305, 1)	2.40476 (305, 1)	2.04383 (305, 1)	1.03076 (305, 1)
250.0 /	3.92394C(351, 1)	3.22214 (260, 1)	2.73096 (260, 1)	2.20231 (262, 1)	1.08832 (262, 1)
240.0 /	3.61390 (9, 1)	2.96045C(264, 1)	2.50866C(251, 1)	1.98485C(264, 1)	.93597 (261, 1)
230.0 /	3.98121 (8, 1)	3.01703C(86, 1)	2.47297C(86, 1)	1.98658 (292, 1)	1.11467C(21, 1)
220.0 /	6.99627C(300, 1)	5.36118C(300, 1)	3.98980C(300, 1)	2.83245C(300, 1)	1.05249C(300, 1)
210.0 /	2.40999C(300, 1)	1.92595 (361, 1)	1.62839C(301, 1)	1.13824C(301, 1)	.57247C(33, 1)
200.0 /	3.04497 (303, 1)	2.30628 (303, 1)	1.69970 (338, 1)	1.26819 (338, 1)	.51561 (306, 1)
190.0 /	2.23725 (81, 1)	1.92164 (289, 1)	1.56463 (289, 1)	1.18697 (289, 1)	.58617C(12, 1)
180.0 /	2.39579C(236, 1)	1.72670C(236, 1)	1.23471 (307, 1)	1.07731 (307, 1)	.49700C(284, 1)
170.0 /	2.16763C(288, 1)	1.54544C(288, 1)	1.17109C(279, 1)	1.00617 (302, 1)	.41447C(21, 1)
160.0 /	1.67705C(56, 1)	1.33591 (337, 1)	1.22331 (337, 1)	1.04830 (337, 1)	.56416 (337, 1)
150.0 /	2.61383C(54, 1)	2.09738C(54, 1)	1.64723C(54, 1)	1.25878C(115, 1)	.65949C(115, 1)
140.0 /	1.93127C(161, 1)	1.48470 (27, 1)	1.25688C(354, 1)	1.12298 (99, 1)	.57596C(20, 1)
130.0 /	2.58845C(200, 1)	2.09021C(13, 1)	1.84613C(200, 1)	1.54043C(20, 1)	.92235C(13, 1)
120.0 /	2.80002 (336, 1)	2.20476 (336, 1)	1.66202 (336, 1)	1.37459C(20, 1)	.61410C(38, 1)
110.0 /	3.26434C(228, 1)	2.80559C(229, 1)	2.15201C(229, 1)	1.56753C(229, 1)	.79588C(351, 1)
100.0 /	2.26462C(228, 1)	1.80669 (112, 1)	1.33697C(228, 1)	.95992C(228, 1)	.40608C(213, 1)
90.0 /	2.28159 (201, 1)	1.97584 (201, 1)	1.58152C(65, 1)	1.23103C(213, 1)	.64972 (201, 1)
80.0 /	2.96789C(282, 1)	2.37249C(282, 1)	1.82211C(282, 1)	1.32500C(282, 1)	.54847C(309, 1)
70.0 /	2.75626 (183, 1)	2.33428 (183, 1)	1.93008 (183, 1)	1.47640C(98, 1)	.55445 (184, 1)
60.0 /	3.11512 (322, 1)	2.54163 (58, 1)	1.86504 (58, 1)	1.57313 (183, 1)	.61891 (322, 1)
50.0 /	2.80384C(211, 1)	2.37623C(211, 1)	1.90896C(211, 1)	1.47919 (51, 1)	.59487 (51, 1)
40.0 /	2.54915C(358, 1)	2.00074C(358, 1)	1.50613C(358, 1)	1.07294C(358, 1)	.53809C(54, 1)
30.0 /	3.48882C(52, 1)	2.66630C(52, 1)	1.97246C(52, 1)	1.38607C(52, 1)	.66987 (185, 1)
20.0 /	3.47124 (4, 1)	2.83964C(70, 1)	2.13923C(70, 1)	1.53520C(70, 1)	.57431C(70, 1)
10.0 /	2.19075 (50, 1)	1.81025C(49, 1)	1.50252C(49, 1)	1.15845C(49, 1)	.48983C(353, 1)
360.0 /	2.43875 (345, 1)	2.00856 (36, 1)	1.80068C(52, 1)	1.29346C(52, 1)	.47761C(52, 1)

RUN ENDED ON 08-23-90 AT 21:43:59

1 ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)

SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
RUN BEGAN ON 10-19-90 AT 14:37:21

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*** IWTS Case 2 (1,000 acfm) -- 1986 ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION) WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	1
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	1
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	2
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	1
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	0
NUMBER OF INPUT SOURCES	NSOURC =	1
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS =	10
NUMBER OF Y (THETA) GRID VALUES	NYPNTS =	36
NUMBER OF DISCRETE RECEPTORS	NXWYPT =	0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =	.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR =	10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET =	9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY =	.000000E+00
SURFACE STATION NO.	ISS =	12842

```
YEAR OF SURFACE DATA                                                  ISY = 86
UPPER AIR STATION NO.                                                 IUS = 12842
YEAR OF UPPER AIR DATA                                                IUY = 86
ALLOCATED DATA STORAGE                                              LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN                          MIMIT =  8613 WORDS
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*** IWTS Case 2 (1,000 acfm) -- 1986 ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54,   3.09,   5.14,   8.23,   10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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*** IWTS Case 2 (1,000 acfm) -- 1986 ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0.,   0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

```
     185.0,      241.0,      315.0,      426.0,      555.0,      722.0,      962.0,     1258.0,     1665.0,     6000.0,
```

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

```
     360.0,       10.0,       20.0,       30.0,       40.0,       50.0,       60.0,       70.0,       80.0,       90.0,
     100.0,      110.0,      120.0,      130.0,      140.0,      150.0,      160.0,      170.0,      180.0,      190.0,
     200.0,      210.0,      220.0,      230.0,      240.0,      250.0,      260.0,      270.0,      280.0,      290.0,
     300.0,      310.0,      320.0,      330.0,      340.0,      350.0,
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*** IWTS Case 2 (1,000 acfm) -- 1986 ***

*** SOURCE DATA ***

```
                   EMISSION RATE                                                  TEMP.    EXIT VEL.
                      TYPE=0,1                                                    TYPE=0    TYPE=0
         T W       (GRAMS/SEC)                                                   (DEG.K);  (M/SEC);              BLDG.     BLDG.     BLDG.
         Y A NUMBER   TYPE=2                               BASE                  VERT.DIM  HORZ.DIM DIAMETER  HEIGHT    LENGTH     WIDTH
  SOURCE P K  PART.  (GRAMS/SEC)     X         Y          ELEV.     HEIGHT       TYPE=1    TYPE=1,2  TYPE=0    TYPE=0    TYPE=0    TYPE=0
  NUMBER E E  CATS. *PER METER**2 (METERS) (METERS)  (METERS)  (METERS)  (METERS)  (METERS) (METERS) (METERS) (METERS) (METERS)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

      1 0 0    0    .10000E+01        .0         .0        .0     30.48    293.15       1.62      .61      .00       .00       .00
 * CALM HOURS (=1) FOR DAY   1 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1  1  1  0  0
 * CALM HOURS (=1) FOR DAY   2 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
 * CALM HOURS (=1) FOR DAY   3 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY   5 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  12 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
 * CALM HOURS (=1) FOR DAY  13 *  0  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  14 *  0  0  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
 * CALM HOURS (=1) FOR DAY  15 *  0  0  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  20 *  0  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
 * CALM HOURS (=1) FOR DAY  21 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  1
 * CALM HOURS (=1) FOR DAY  22 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
 * CALM HOURS (=1) FOR DAY  24 *  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  25 *  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  1  1  1
 * CALM HOURS (=1) FOR DAY  26 *  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  28 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
 * CALM HOURS (=1) FOR DAY  29 *  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
 * CALM HOURS (=1) FOR DAY  30 *  0  0  1  0  0  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  31 *  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
 * CALM HOURS (=1) FOR DAY  33 *  1  0  0  1  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  38 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  1  1  0
 * CALM HOURS (=1) FOR DAY  39 *  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1  1
 * CALM HOURS (=1) FOR DAY  40 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
 * CALM HOURS (=1) FOR DAY  44 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
 * CALM HOURS (=1) FOR DAY  48 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
 * CALM HOURS (=1) FOR DAY  49 *  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  52 *  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  53 *  0  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  54 *  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  56 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
 * CALM HOURS (=1) FOR DAY  57 *  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  59 *  0  0  0  0  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  60 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 * CALM HOURS (=1) FOR DAY  61 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

* CALM HOURS (=1) FOR DAY 62 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 64 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 65 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 67 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 70 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 73 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 74 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 76 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 83 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 86 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 87 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 90 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 91 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 92 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 93 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 94 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 96 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 97 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 98 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 101 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 102 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 103 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 104 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 108 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 113 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 114 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 115 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 117 *	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 119 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 121 *	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 123 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 127 *	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 128 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 129 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 132 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 137 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 142 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 143 *	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 145 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 150 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 153 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 154 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 158 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 159 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 160 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 161 *	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 162 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 164 *	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0

* CALM HOURS (=1) FOR DAY 165 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 168 *	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 171 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 172 *	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 173 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 175 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 176 *	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 177 *	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 178 *	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 179 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 180 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 181 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 188 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 189 *	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 190 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 194 *	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 195 *	1	1	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 196 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 197 *	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 198 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 199 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 200 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 204 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 205 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 206 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 207 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 209 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 210 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 211 *	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 213 *	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 219 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 220 *	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 225 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 230 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 231 *	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 235 *	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 239 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 241 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 244 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 246 *	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 247 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 250 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 251 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 252 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 255 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 256 *	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 257 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 264 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 265 *	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 266 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 270 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 271 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 275 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 276 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 277 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 278 *	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 279 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 281 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 284 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 285 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 293 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 297 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 300 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 301 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 323 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 324 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 343 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 349 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 350 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 353 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 358 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0

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'N'-DAY
365 DAYS
SGROUP# 1

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.43072 AND OCCURRED AT (241.0, 80.0) *

DIRECTION / (DEGREES) /	185.0	241.0	315.0	426.0	RANGE (METERS) 555.0	722.0	962.0	1258.0	1665.0
350.0 /	.42188	.50078	.52776	.50833	.45850	.39403	.31844	.25090	.19068
340.0 /	.41571	.49840	.53228	.52346	.48264	.42307	.34611	.27285	.20590
330.0 /	.50731	.62988	.67883	.66473	.61115	.53743	.44379	.35351	.26963
320.0 /	.62114	.76874	.81975	.78857	.71180	.61269	.49353	.38466	.28758
310.0 /	.74572	.92863	1.01438	1.01137	.94099	.83325	.69071	.55171	.42191
300.0 /	.79621	.98623	1.05634	1.03060	.95871	.87496	.76751	.64886	.52353
290.0 /	.72815	.89076	.93160	.88094	.80279	.72626	.63741	.54087	.43820
280.0 /	.69391	.85568	.91481	.88989	.82464	.74857	.65232	.54793	.43934
270.0 /	.74402	.93946	1.04511	1.05695	.99201	.89380	.76686	.63844	.51031
260.0 /	.75249	.93161	.99729	.96129	.87436	.77910	.67409	.57071	.46491
250.0 /	.77415	.97673	1.05984	1.02984	.94154	.84787	.74781	.64639	.53700
240.0 /	.75547	.98422	1.11600	1.13843	1.07439	.97496	.84527	.71067	.57377
230.0 /	.63279	.81316	.92252	.95159	.91181	.83836	.73279	.61641	.49716
220.0 /	.49215	.62031	.71979	.77190	.75440	.69076	.58798	.47835	.37225
210.0 /	.38451	.46461	.50336	.49669	.45326	.39118	.31650	.24904	.18913
200.0 /	.30286	.36827	.41158	.42591	.40264	.35429	.28806	.22601	.17084
190.0 /	.27107	.33876	.37657	.38032	.35546	.31708	.26886	.22181	.17670
180.0 /	.28081	.36346	.40350	.39467	.35261	.29896	.24136	.19339	.15110
170.0 /	.27134	.34777	.38111	.36936	.32873	.27606	.21735	.16806	.12607
160.0 /	.24495	.30726	.33518	.32772	.29544	.25165	.20127	.15771	.11987
150.0 /	.28440	.36832	.42186	.43287	.40005	.34411	.27572	.21651	.16503
140.0 /	.31324	.39601	.43539	.43193	.40001	.35740	.30556	.25418	.20366
130.0 /	.32639	.42217	.47598	.48689	.46171	.41692	.35551	.29333	.23299
120.0 /	.41004	.53584	.59948	.59763	.54961	.47922	.39230	.31178	.23868
110.0 /	.62052	.78797	.83381	.76517	.64918	.52381	.39816	.29921	.21816
100.0 /	.88856	1.08517	1.09093	.93958	.75264	.57193	.40585	.28635	.19623
90.0 /	1.15048	1.37889	1.35285	1.12752	.87501	.64603	.44792	.31228	.21300
80.0 /	1.24520	1.43072	1.35885	1.10646	.84937	.62405	.43051	.29713	.19954
70.0 /	1.21176	1.34383	1.24323	.99612	.76288	.56636	.39980	.28340	.19615
60.0 /	1.05312	1.16221	1.07636	.86868	.67457	.51422	.37913	.28190	.20544
50.0 /	.82747	.92214	.88081	.75134	.61818	.49915	.38935	.30260	.22901
40.0 /	.67444	.76490	.74119	.63575	.51955	.41182	.31214	.23589	.17369
30.0 /	.59552	.69806	.71369	.65709	.56862	.46718	.35751	.26694	.19202
20.0 /	.54911	.64689	.66545	.61585	.53384	.43659	.32951	.24102	.16903
10.0 /	.51471	.60198	.61440	.56603	.49289	.41075	.32142	.24534	.18054
360.0 /	.48200	.57725	.61180	.58903	.52779	.44639	.35115	.26877	.19834

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'N'-DAY
365 DAYS
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1.43072 AND OCCURRED AT (241.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 6000.0
350.0 /	.03946
340.0 /	.04062
330.0 /	.05514
320.0 /	.05601
310.0 /	.08742
300.0 /	.12254
290.0 /	.10338
280.0 /	.10059
270.0 /	.11880
260.0 /	.11309
250.0 /	.13657
240.0 /	.13640
230.0 /	.11814
220.0 /	.08031
210.0 /	.03939
200.0 /	.03554
190.0 /	.04180
180.0 /	.03434
170.0 /	.02589
160.0 /	.02571
150.0 /	.03544
140.0 /	.04825
130.0 /.	.05401
120.0 /	.05009
110.0 /	.04060
100.0 /	.03070
90.0 /	.03380
80.0 /	.02928
70.0 /	.03197
60.0 /	.03932
50.0 /	.04733
40.0 /	.03349
30.0 /	.03395
20.0 /	.02731
10.0 /	.03452
360.0 /	.03859

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HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 250.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	59.02079 (194,11)	62.97424 (3,11)	77.07597 (3,11)	70.54804 (3,11)	63.88503 (358, 3)
340.0 /	58.88422 (217,11)	61.30341 (165,10)	62.74569 (232,13)	56.31312 (232,13)	50.38074 (18,20)
330.0 /	58.69664. (128, 9)	61.30341 (128, 9)	66.88483 (179, 9)	60.87100 (179, 9)	62.01557 (249, 9)
320.0 /	73.16734 (150,10)	78.44463 (150,10)	77.07595 (215,17)	70.54802 (215,17)	62.01547 (75, 4)

310.0 /	61.97809 (160, 9)	66.26299 (160, 9)	66.88482 (232,12)	60.87099 (232,12)	62.01558 (172, 9)
300.0 /	72.13986 (219,10)	77.32462 (219,10)	72.65881 (248, 8)	66.34691 (248, 8)	63.88503 (209, 7)
290.0 /	68.16160 (128,10)	72.99067 (128,10)	62.74566 (257,10)	56.31309 (257,10)	63.88503 (59,20)
280.0 /	61.97803 (243,15)	66.26292 (243,15)	66.88476 (196, 9)	60.87095 (196, 9)	50.38073 (2, 9)
270.0 /	72.13988 (257,11)	77.32462 (257,11)	77.07591 (38,13)	70.54799 (38,13)	62.01554 (215,20)
260.0 /	60.29887 (257,12)	62.97425 (168,16)	77.07597 (168,16)	70.54805 (168,16)	63.88503 (178, 7)
250.0 /	76.43942 (257,12)	77.32464 (270,11)	80.79599 (349,17)	74.09372 (349,17)	62.01553 (351, 8)
240.0 /	70.45691 (237,10)	75.49068 (237,10)	66.88471 (279,10)	60.87090 (279,10)	63.88503 (173,17)
230.0 /	76.26173 (174,12)	78.44464 (246,11)	77.07597 (55,10)	70.54805 (55,10)	63.88503 (116, 8)
220.0 /	72.09995 (179,11)	72.99067 (217,17)	66.88477 (175,19)	60.87095 (175,19)	63.88503 (102,22)
210.0 /	73.63776 (149,11)	77.32464 (293,16)	77.07591 (143, 9)	70.54800 (143, 9)	56.72524 (164, 9)
200.0 /	72.13988 (308,13)	77.32462 (308,13)	65.90646 (308,13)	51.59328 (364, 8)	66.12697 (364, 8)
190.0 /	72.13987 (333,13)	77.32462 (333,13)	65.90646 (333,13)	54.47178 (164,11)	42.26127 (164,11)
180.0 /	73.63779 (144,14)	77.32461 (172,13)	77.07595 (116, 9)	70.54803 (116, 9)	62.01546 (236, 9)
170.0 /	70.45694 (101,10)	75.49071 (101,10)	64.29488 (101,10)	51.95880 (194,20)	63.88503 (194,20)
160.0 /	73.16735 (251,11)	78.44463 (251,11)	66.89127 (251,11)	47.18723 (251,11)	56.72520 (25,10)
150.0 /	68.16155 (289,13)	72.99061 (289,13)	77.07593 (203,17)	70.54801 (203,17)	55.31386 (203,17)
140.0 /	76.43943 (195,14)	77.32460 (163,16)	65.90644 (163,16)	54.28049 (161,11)	63.88503 (303, 1)
130.0 /	65.31175 (246,14)	69.88867 (246,14)	59.37991 (246,14)	51.95880 (299,20)	63.88503 (299,20)
120.0 /	73.51281 (217,16)	78.82128 (217,16)	67.22256 (217,16)	60.87093 (229, 9)	48.90698 (316,17)
110.0 /	72.13988 (310,11)	77.32463 (310,11)	65.90646 (310,11)	57.00690 (249,12)	63.88503 (191, 8)
100.0 /	73.16734 (193,11)	78.44465 (193,11)	66.89128 (193,11)	47.18724 (193,11)	48.90697 (51, 4)
90.0 /	73.51282 (3,16)	78.82128 (3,16)	67.22256 (3,16)	51.04997 (3,15)	48.90697 (168,13)
80.0 /	76.43943 (199,11)	75.49069 (242,16)	79.84998 (174,18)	73.19142 (174,18)	57.47261 (174,18)
70.0 /	75.73080 (234,14)	78.44464 (153,10)	66.89128 (153,10)	60.87094 (208, 9)	50.38073 (51,24)
60.0 /	75.73080 (165,11)	72.99067 (246,13)	80.79599 (163, 9)	74.09372 (163, 9)	58.21022 (163, 9)
50.0 /	74.85275 (179,12)	66.26291 (246,13)	79.84998 (3,17)	73.19141 (3,17)	62.01548 (3,18)
40.0 /	73.51282 (236,15)	78.82128 (236,15)	80.79599 (101, 8)	74.09372 (101, 8)	58.21022 (101, 8)
30.0 /	70.45693 (195,10)	75.49071 (195,10)	79.84999 (265,18)	73.19143 (265,18)	62.01552 (227, 8)
20.0 /	72.09995 (203,14)	72.99065 (133,12)	66.88480 (283,16)	60.87099 (283,16)	62.01552 (256, 8)
10.0 /	72.13986 (167,17)	77.32462 (167,17)	65.90645 (167,17)	54.28046 (198, 9)	62.01551 (335, 2)
360.0 /	73.16736 (234,11)	78.44463 (234,11)	79.84998 (160, 8)	73.19141 (160, 8)	57.47260 (160, 8)

1

HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 80.79599 AND OCCURRED AT (315.0, 250.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	62.39924 (358, 3)	51.41948 (358, 3)	39.23330 (358, 3)	31.06706 (141, 1)	12.56258 (141, 1)
340.0 /	48.30764 (18,20)	39.29421 (18,20)	32.00989 (353,24)	31.06706 (160, 2)	12.56258 (160, 2)
330.0 /	60.49763 (249, 9)	49.77722 (249, 9)	39.21788 (220,22)	31.83625 (220,22)	12.56258 (209, 2)
320.0 /	60.49755 (75, 4)	49.77715 (75, 4)	37.92094 (75, 4)	27.27820 (75, 4)	10.42917 (168, 2)
310.0 /	60.49765 (172, 9)	49.77723 (172, 9)	37.92101 (172, 9)	31.06706 (161, 2)	12.56258 (161, 2)
300.0 /	62.39924 (209, 7)	51.41949 (209, 7)	39.23423 (209, 7)	31.06706 (153, 3)	12.56258 (153, 3)
290.0 /	62.40012 (59,20)	51.46578 (59,20)	41.68678 (242, 7)	33.94676 (242, 7)	12.56258 (257, 2)
280.0 /	48.30764 (2, 9)	46.17183 (352, 1)	41.68678 (352, 1)	33.94676 (352, 1)	12.56258 (197, 6)
270.0 /	60.49762 (215,20)	49.77720 (215,20)	40.35550 (309, 7)	32.14683 (309, 7)	12.56258 (286, 4)
260.0 /	62.39924 (178, 7)	51.41948 (178, 7)	39.23331 (178, 7)	31.83631 (190, 7)	12.56259 (129,22)
250.0 /	60.49759 (351, 8)	49.77718 (351, 8)	40.96714 (59,19)	32.24489 (59,19)	12.56258 (263, 1)
240.0 /	62.39924 (173,17)	51.41948 (173,17)	41.68678 (265,20)	33.94676 (265,20)	11.76333 (39, 1)

230.0 /	62.39925 (116, 8)	51.41948 (116, 8)	39.23331 (116, 8)	31.06706 (150,22)	12.56258 (150,22)
220.0 /	62.39924 (102,22)	51.41948 (102,22)	41.68678 (242,20)	33.94676 (242,20)	12.56258 (244, 1)
210.0 /	55.12966 (164, 9)	45.15522 (164, 9)	34.23902 (164, 9)	26.86560 (176, 4)	11.60824 (33,22)
200.0 /	66.85677 (364, 8)	57.16992 (364, 8)	45.64055 (364, 8)	35.43213 (364, 8)	11.03397 (364, 8)
190.0 /	39.28741 (288,18)	43.55675 (288,18)	39.21784 (288,18)	31.83622 (288,18)	12.56258 (157, 4)
180.0 /	60.49754 (236, 9)	49.77713 (236, 9)	37.92093 (236, 9)	27.27819 (236, 9)	10.42907 (282,21)
170.0 /	62.39924 (194,20)	51.41948 (194,20)	39.23330 (194,20)	28.27218 (194,20)	10.97489 (21, 2)
160.0 /	55.12960 (25,10)	45.15517 (25,10)	34.23898 (25,10)	26.86544 (286,21)	11.76333 (119,24)
150.0 /	46.83577 (175,18)	38.03935 (175,18)	28.78787 (175,18)	25.20559 (142,23)	11.87083 (142,23)
140.0 /	62.39924 (303, 1)	51.41948 (303, 1)	39.23331 (303, 1)	31.06706 (248,21)	12.56258 (248,21)
130.0 /	62.39924 (299,20)	51.41948 (299,20)	39.23331 (299,20)	29.78179 (119, 7)	11.13572 (64, 1)
120.0 /	46.83581 (316,17)	43.55687 (288, 8)	39.21795 (288, 8)	31.83632 (288, 8)	12.17322 (38,21)
110.0 /	62.39924 (191, 8)	51.41948 (191, 8)	39.23331 (191, 8)	31.83630 (229,20)	10.42910 (351,21)
100.0 /	47.20995 (221,19)	38.37683 (221,19)	32.00989 (163,20)	25.85987 (163,20)	9.48160 (96,21)
90.0 /	46.83580 (168,13)	38.03938 (168,13)	28.78790 (168,13)	31.06706 (213, 4)	12.56258 (213, 4)
80.0 /	48.30764 (53, 2)	43.55682 (282,19)	39.21791 (282,19)	31.83628 (282,19)	10.42913 (309,20)
70.0 /	48.30764 (51,24)	39.29421 (51,24)	32.00989 (213, 2)	26.86551 (183, 4)	10.42910 (183, 4)
60.0 /	41.77000 (163, 9)	30.88025 (239,18)	25.07147 (324,20)	26.86549 (183, 2)	10.42909 (183, 2)
50.0 /	60.49756 (3,18)	49.77716 (3,18)	37.92095 (3,18)	27.27820 (3,18)	10.42910 (331, 1)
40.0 /	42.68096 (76,18)	46.17183 (322, 7)	41.68678 (322, 7)	33.94676 (322, 7)	12.56258 (231, 5)
30.0 /	60.49760 (227, 8)	49.77719 (227, 8)	37.92097 (227, 8)	27.27822 (227, 8)	7.87138 (37,20)
20.0 /	60.49760 (256, 8)	49.77718 (256, 8)	39.21786 (331, 2)	31.83624 (331, 2)	7.70065 (70, 3)
10.0 /	60.49759 (335, 2)	49.77718 (335, 2)	37.92096 (335, 2)	31.06705 (353,22)	12.56259 (353,22)
360.0 /	55.12974 (52, 3)	45.70290 (70, 7)	39.21789 (126,22)	31.83626 (126,22)	9.48160 (321,22)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 79.84998 AND OCCURRED AT (315.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	58.88423 (234,12)	57.80340 (249,13)	60.56822 (214, 9)	54.28053 (214, 9)	56.72526 (182, 7)
340.0 /	58.69664 (165,10)	61.01118 (194,10)	57.10080 (205, 9)	51.05004 (205, 9)	48.90699 (103, 8)
330.0 /	57.80120 (162,12)	60.14218 (190,10)	62.74569 (29,10)	56.31312 (29,10)	62.01549 (185, 7)
320.0 /	68.16154 (160, 9)	72.99061 (160, 9)	66.89127 (150,10)	60.87098 (208,10)	62.01547 (162, 8)
310.0 /	57.60460 (286,15)	60.14218 (286,15)	66.88464 (190, 9)	60.87083 (190, 9)	50.38073 (241, 7)
300.0 /	72.13983 (238,15)	77.32458 (238,15)	65.90645 (219,10)	54.28041 (168, 9)	51.88989 (248, 8)
290.0 /	61.97808 (179,10)	66.26298 (179,10)	62.09998 (128,10)	54.47165 (154, 9)	48.90702 (4, 4)
280.0 /	59.02079 (222,14)	62.20237 (178,10)	60.11143 (154, 9)	54.47176 (154, 9)	48.90702 (165, 7)
270.0 /	70.45692 (178,10)	75.49069 (178,10)	77.07591 (235,10)	70.54799 (235,10)	56.72515 (246, 9)
260.0 /	58.88423 (247,13)	62.97419 (168,18)	77.07589 (168,18)	70.54798 (168,18)	56.72528 (22, 9)
250.0 /	72.13988 (270,11)	75.49068 (252,12)	77.07598 (39,17)	70.54806 (39,17)	58.21021 (349,17)
240.0 /	70.25700 (174,13)	66.26294 (245,12)	64.29485 (237,10)	57.00690 (188, 8)	62.01554 (316, 8)
230.0 /	73.63776 (174,13)	62.97425 (55,10)	72.65875 (251, 9)	66.34688 (251, 9)	62.01551 (364,22)
220.0 /	70.25700 (149,11)	57.80345 (293,16)	62.74569 (160,11)	56.31311 (160,11)	62.01550 (150, 8)
210.0 /	72.13988 (293,16)	75.49069 (257,14)	65.90646 (293,16)	51.05003 (350,16)	56.72524 (294, 9)
200.0 /	68.16160 (107,10)	72.99067 (107,10)	62.09998 (107,10)	46.83894 (289, 8)	50.38073 (306,24)
190.0 /	70.45696 (237,17)	75.49072 (237,17)	64.29488 (237,17)	47.53323 (53,11)	40.43168 (38,12)
180.0 /	72.13986 (172,13)	62.97422 (116, 9)	66.88483 (53,11)	60.87100 (53,11)	55.31387 (116, 9)
170.0 /	61.97800 (169, 9)	66.26289 (169, 9)	56.20544 (169, 9)	45.89364 (326,16)	50.38073 (76, 2)
160.0 /	73.16735 (289,11)	78.44463 (289,11)	66.89127 (289,11)	47.18723 (289,11)	48.90693 (5, 9)

150.0 /	60.29885 (195,14)	62.97419 (203,17)	62.09993 (289,13)	54.28046 (169,10)	48.90694 (175,18)
140.0 /	72.13986 (163,16)	66.26298 (289,13)	60.56818 (161,11)	51.95880 (303, 1)	48.88149 (221,20)
130.0 /	60.29891 (195,14)	60.14216 (12,14)	52.73210 (229, 9)	47.53331 (229, 9)	56.72525 (237,23)
120.0 /	65.31179 (246,14)	69.88871 (246,14)	66.88474 (229, 9)	54.47168 (228,13)	48.90696 (254,18)
110.0 /	58.69664 (326,14)	61.30341 (326,14)	63.48824 (249,12)	54.47174 (228,13)	50.38073 (269,17)
100.0 /	58.42184 (280,11)	61.01118 (280,11)	52.56778 (160,10)	46.83897 (160,10)	48.88132 (221,19)
90.0 /	68.16158 (351,12)	72.99065 (351,12)	62.09996 (351,12)	47.43199 (3,16)	48.90696 (219,22)
80.0 /	70.45692 (242,16)	69.88871 (234,15)	64.29485 (242,16)	57.00690 (2,15)	50.38073 (53, 2)
70.0 /	73.16736 (153,10)	75.49073 (22,12)	66.88475 (208, 9)	51.04998 (249,17)	47.44024 (208, 9)
60.0 /	68.16160 (246,13)	65.93213 (163, 9)	63.48824 (212, 8)	57.00690 (212, 8)	44.29575 (212, 8)
50.0 /	61.97802 (246,13)	65.18030 (3,17)	79.84998 (351,16)	73.19141 (351,16)	57.47261 (3,17)
40.0 /	73.16734 (199, 9)	78.44463 (199, 9)	67.22256 (236,15)	57.00690 (324, 9)	44.73639 (76,18)
30.0 /	57.80120 (244,14)	65.18032 (265,18)	72.65882 (184,19)	66.34693 (184,19)	57.47262 (265,18)
20.0 /	68.16158 (133,12)	62.20234 (195,10)	66.88472 (175, 9)	60.87091 (175, 9)	50.38073 (163, 8)
10.0 /	72.09995 (203,14)	66.26293 (133,12)	60.56816 (198, 9)	51.05000 (216, 8)	50.38073 (249,11)
360.0 /	72.13989 (249,13)	77.32464 (249,13)	77.07600 (283,17)	70.54808 (283,17)	56.72533 (52, 3)

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2ND HIGH
1-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 79.84998 AND OCCURRED AT (315.0, 50.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	55.12967 (182, 7)	45.15522 (182, 7)	34.23903 (182, 7)	31.06706 (161,22)	12.56258 (161,22)
340.0 /	46.83582 (103, 8)	38.03939 (103, 8)	30.11429 (206, 7)	26.86561 (335, 6)	10.42914 (335, 6)
330.0 /	60.49757 (185, 7)	49.77716 (185, 7)	37.92099 (249, 9)	31.06706 (209, 2)	10.42915 (205, 2)
320.0 /	60.49755 (162, 8)	49.77715 (162, 8)	37.92094 (162, 8)	27.27820 (162, 8)	9.48160 (150, 3)
310.0 /	48.30764 (241, 7)	39.29421 (241, 7)	32.00989 (149, 6)	31.06706 (167, 3)	12.56258 (167, 3)
300.0 /	48.30764 (53, 8)	39.29422 (53, 8)	32.65021 (331, 6)	31.06706 (166, 3)	12.56258 (166, 3)
290.0 /	46.83585 (4, 4)	46.17183 (242, 7)	39.52562 (59,20)	31.83637 (353,18)	12.56258 (277, 3)
280.0 /	47.21013 (310, 7)	43.55694 (300, 2)	39.21802 (300, 2)	31.83637 (300, 2)	12.56258 (274, 7)
270.0 /	55.12956 (246, 9)	48.10708 (309, 7)	37.92099 (215,20)	31.06706 (286, 4)	12.56258 (286,23)
260.0 /	55.12969 (22, 9)	45.15524 (22, 9)	39.21795 (190, 7)	31.83631 (246, 8)	12.56259 (245, 6)
250.0 /	55.12970 (364,18)	49.17223 (59,19)	37.92097 (351, 8)	31.06706 (263, 1)	11.87083 (353, 2)
240.0 /	60.49761 (316, 8)	49.77720 (316, 8)	39.23331 (173,17)	28.27218 (173,17)	11.60824 (105, 6)
230.0 /	60.49759 (364,22)	49.77718 (364,22)	37.92097 (364,22)	31.06706 (161,24)	12.56258 (161,24)
220.0 /	60.49758 (150, 8)	49.77717 (150, 8)	39.23331 (102,22)	31.83632 (158, 7)	11.54912 (293, 6)
210.0 /	55.12966 (294, 9)	45.15522 (294, 9)	34.23902 (294, 9)	24.49926 (164, 9)	10.42914 (176, 4)
200.0 /	48.30764 (306,24)	39.29421 (306,24)	30.11419 (283, 1)	24.25217 (283, 1)	9.06492 (44,21)
190.0 /	38.30747 (38,12)	36.56273 (273,19)	32.65018 (273,19)	31.06706 (157, 4)	9.85475 (301, 2)
180.0 /	42.68098 (351, 5)	34.50774 (351, 5)	25.99289 (351, 5)	26.86546 (282,21)	10.42905 (284,22)
170.0 /	48.30764 (76, 2)	39.29421 (76, 2)	29.78408 (76, 2)	26.86544 (279,22)	10.42906 (279,22)
160.0 /	46.83576 (5, 9)	38.03934 (5, 9)	30.11422 (285,19)	24.49923 (25,10)	10.42906 (286,21)
150.0 /	46.83577 (299,21)	38.03935 (299,21)	28.78787 (299,21)	20.70042 (100, 1)	11.24460 (100, 1)
140.0 /	47.21012 (221,20)	38.37698 (221,20)	32.95879 (49, 7)	28.76060 (49, 7)	11.54912 (54,22)
130.0 /	55.12967 (237,23)	45.15522 (237,23)	35.67317 (119, 7)	28.27218 (299,20)	9.48160 (144,21)
120.0 /	46.83578 (254,18)	38.03939 (316,17)	32.00989 (281,19)	27.64750 (38,21)	10.42913 (201, 1)
110.0 /	48.30764 (269,17)	43.55684 (229,20)	39.21794 (229,20)	28.27218 (191, 8)	9.40554 (47,22)
100.0 /	46.83580 (51, 4)	38.03938 (51, 4)	28.87256 (221,19)	24.06673 (96,21)	7.87137 (213, 1)
90.0 /	46.83579 (219,22)	38.03936 (219,22)	28.78789 (219,22)	24.06673 (76,20)	9.63684 (3,22)
80.0 /	48.30764 (284,17)	39.29421 (53, 2)	32.65014 (76,19)	26.86558 (309,20)	7.64232 (183, 5)

70.0 /	42.68094 (253,16)	35.84994 (213, 2)	29.78409 (51,24)	25.85986 (213, 2)	8.76205 (65,22)
60.0 /	38.30745 (239,18)	28.38987 (324,20)	24.55576 (183, 2)	24.06673 (183, 1)	9.48160 (183, 1)
50.0 /	55.12965 (5, 5)	45.15520 (5, 5)	34.23901 (5, 5)	26.86553 (331, 1)	10.42907 (191, 2)
40.0 /	41.76999 (101, 8)	34.50772 (76,18)	28.19652 (231, 5)	31.06706 (231, 5)	9.48160 (159, 1)
30.0 /	55.12960 (60, 3)	45.15516 (60, 3)	34.23898 (60, 3)	24.49923 (60, 3)	7.87138 (191,23)
20.0 /	48.30764 (163, 8)	43.55678 (331, 2)	37.92097 (256, 8)	31.75628 (70, 3)	7.20627 (331, 2)
10.0 /	48.30764 (249,11)	39.29422 (249,11)	32.00989 (159,22)	27.27822 (335, 2)	9.48160 (225,22)
360.0 /	54.88502 (70, 7)	45.15528 (52, 3)	35.86848 (70, 7)	27.42134 (70, 7)	7.87135 (171, 3)

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HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 54.16554 AND OCCURRED AT (185.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	33.30962 (234, 4)	29.99449 (234, 4)	26.00760 (214, 3)	29.55655 (206, 3)	28.85069 (182, 3)
340.0 /	35.01018 (194, 4)	32.53135 (194, 4)	35.37368 (232, 5)	31.49770 (232, 5)	25.27084 (334, 3)
330.0 /	25.38578 (29, 4)	33.75002 (29, 4)	34.35250 (29, 4)	41.18009 (41, 3)	43.26403 (41, 3)
320.0 /	31.89513 (272, 4)	33.02329 (272, 4)	28.01304 (215, 3)	23.51601C(215, 6)	29.74093 (75, 2)
310.0 /	36.89048 (286, 5)	38.28650 (286, 5)	35.29717 (151, 3)	32.38306 (151, 3)	31.50470 (335, 4)
300.0 /	51.84195 (238, 5)	47.49577 (238, 5)	36.90918 (186, 4)	33.38568 (272, 6)	28.64093 (272, 6)
290.0 /	53.47287 (238, 5)	47.06546 (238, 5)	34.87281 (238, 5)	24.21088 (68, 3)	25.70354 (353, 6)
280.0 /	40.04157 (243, 5)	39.94300 (243, 5)	32.47418 (243, 5)	26.24504 (147, 3)	30.27083 (2, 3)
270.0 /	37.77464C(176, 5)	39.13402 (235, 4)	40.85218 (235, 4)	34.03427 (235, 4)	32.75756 (320, 3)
260.0 /	38.16221 (257, 4)	42.02307 (168, 6)	51.51299 (168, 6)	47.23816 (168, 6)	37.08478 (168, 6)
250.0 /	35.38076 (237, 4)	36.09940 (245, 4)	34.51935 (245, 4)	27.74441 (168, 6)	31.41682 (351, 3)
240.0 /	47.11280 (237, 4)	44.01665 (237, 4)	39.33563 (76, 3)	39.48099 (76, 3)	39.30215 (316, 3)
230.0 /	35.32613 (237, 4)	32.49279 (292, 5)	30.80440 (293, 4)	29.55760 (158, 3)	28.08768 (158, 3)
220.0 /	30.05710 (177, 4)	30.80470 (177, 4)	25.41880 (177, 4)	22.90729 (350, 6)	25.95395 (361, 5)
210.0 /	25.26795 (177, 4)	29.36473 (12, 4)	33.31837 (12, 4)	28.99342 (12, 4)	22.15208 (12, 4)
200.0 /	31.05999 (108, 4)	31.72417 (108, 4)	27.03773 (108, 4)	29.57400 (289, 3)	29.82427 (306, 5)
190.0 /	25.27972 (289, 4)	30.44075 (289, 4)	28.76225 (289, 4)	23.19763 (363, 3)	22.40861 (363, 3)
180.0 /	26.17036 (236, 4)	30.89711 (236, 4)	30.68660 (288, 4)	25.86209 (303, 3)	29.92608 (303, 3)
170.0 /	31.05493 (177, 5)	32.42474 (177, 5)	28.46834 (177, 5)	21.94910 (288, 4)	21.29501C(194, 7)
160.0 /	35.81093 (177, 5)	33.07256 (177, 5)	25.65376 (177, 5)	19.68349 (363, 5)	18.90840C(25, 4)
150.0 /	29.39003 (289, 5)	32.30225 (289, 5)	28.03081 (289, 5)	23.51600 (203, 6)	25.70180 (76, 1)
140.0 /	25.99813 (289, 5)	30.57569 (289, 5)	28.14207 (289, 5)	21.22127 (13, 4)	21.29501 (303, 1)
130.0 /	33.50430 (246, 5)	35.20394 (246, 5)	29.57468 (246, 5)	25.98696 (189, 6)	21.29519 (299, 7)
120.0 /	26.57100 (326, 5)	30.01411 (177, 6)	34.99455 (177, 6)	30.79008 (177, 6)	23.51024 (276, 6)
110.0 /	38.76707 (326, 5)	40.48186 (326, 5)	42.98516 (177, 6)	38.15968 (177, 6)	29.33166 (177, 6)
100.0 /	39.39799 (194, 5)	32.97381 (194, 5)	32.57371 (160, 6)	28.41449 (160, 6)	21.65066 (160, 6)
90.0 /	54.16554 (194, 5)	47.37065 (194, 5)	35.00138 (194, 5)	26.13745 (158, 6)	19.92418 (158, 6)
80.0 /	45.37268 (276, 5)	46.92786 (276, 5)	39.93274 (174, 6)	36.06151 (174, 6)	28.08446 (174, 6)
70.0 /	47.01419 (234, 5)	43.47535 (234, 5)	33.44614 (234, 5)	23.12052 (163, 4)	23.98170 (253, 6)
60.0 /	49.21261 (255, 4)	47.21414 (255, 4)	37.45222 (255, 4)	33.77469 (212, 3)	27.93154 (212, 3)
50.0 /	33.71867 (219, 5)	32.34028 (219, 5)	35.16738 (3, 6)	41.22880 (3, 6)	39.82943 (3, 6)
40.0 /	43.98206 (170, 4)	50.74191 (170, 4)	46.47442 (170, 4)	34.93884 (170, 4)	24.29909 (170, 4)
30.0 /	37.15376 (195, 4)	42.09482 (170, 4)	40.13314 (170, 4)	31.11567 (170, 4)	22.70169 (185, 4)
20.0 /	29.01319 (102, 4)	29.44069 (102, 4)	25.21450 (37, 4)	28.42067 (52, 5)	28.67359 (52, 5)
10.0 /	34.17753 (181, 4)	34.51651 (181, 4)	28.35290 (181, 4)	24.91862 (37, 6)	28.70230 (37, 6)
360.0 /	40.64957 (234, 4)	38.92079 (234, 4)	30.82048 (234, 4)	24.72629 (345, 4)	28.49431 (345, 4)

1

HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 54.16554 AND OCCURRED AT (185.0, 90.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	28.08238 (358, 1)	24.89379 (358, 1)	19.88136 (358, 1)	14.82688 (358, 1)	4.34355C(30, 2)
340.0 /	26.42509 (334, 3)	23.33613 (334, 3)	18.57630 (334, 3)	13.79617 (334, 3)	4.19054 (160, 1)
330.0 /	38.75316 (41, 3)	30.21454 (41, 3)	22.30538 (41, 3)	18.05466 (205, 1)	6.97265 (205, 1)
320.0 /	31.12746 (75, 2)	27.80163 (75, 2)	22.47038 (75, 2)	16.98136 (75, 2)	3.97646 (163, 1)
310.0 /	30.49869 (171, 2)	26.20493 (171, 2)	20.58722 (171, 2)	16.04449 (71, 1)	6.32106 (71, 1)
300.0 /	22.89926 (134, 3)	21.41321 (192, 7)	19.02706 (192, 7)	17.29300 (153, 1)	6.81130 (153, 1)
290.0 /	28.99514 (353, 6)	27.39119 (353, 6)	22.78843 (353, 6)	19.15772 (257, 1)	7.50768 (257, 1)
280.0 /	28.87173 (2, 3)	23.39152 (2, 3)	18.27495C(174, 2)	16.77438C(174, 2)	5.03655C(174, 2)
270.0 /	28.01782 (320, 3)	21.10022 (320, 3)	15.20652 (320, 3)	14.22607 (134, 2)	5.24758 (311, 2)
260.0 /	26.56829 (168, 6)	21.31498 (281, 1)	19.01663 (281, 1)	17.12513 (305, 2)	6.37489 (305, 2)
250.0 /	30.22612 (351, 3)	24.58887 (351, 3)	18.58403 (351, 3)	14.95959 (263, 2)	5.78432 (263, 2)
240.0 /	36.22268 (316, 3)	29.38239 (316, 3)	22.21772 (316, 3)	15.83612 (316, 3)	5.12648 (116, 2)
230.0 /	23.57520 (158, 3)	18.19550 (364, 8)	15.58155 (86, 2)	13.92926 (86, 2)	6.25290 (89, 1)
220.0 /	24.10842 (361, 5)	20.17844 (242, 7)	17.46114 (242, 7)	14.89241 (294, 2)	7.07151 (294, 2)
210.0 /	18.43630 (294, 3)	15.18606 (294, 3)	11.59746 (294, 3)	9.84768 (361, 8)	4.83948 (361, 8)
200.0 /	28.45399 (306, 5)	23.00517 (306, 5)	17.32859 (306, 5)	12.34163 (306, 5)	3.68064 (364, 3)
190.0 /	18.96285 (363, 3)	15.42910 (288, 6)	13.67941 (288, 6)	11.26533 (289, 2)	4.78220 (113, 2)
180.0 /	28.01125 (303, 3)	22.31945 (303, 3)	16.66288 (303, 3)	11.77890 (303, 3)	4.51747 (307, 7)
170.0 /	20.79975C(194, 7)	17.13983C(194, 7)	13.07777C(194, 7)	9.42406C(194, 7)	3.65830 (21, 1)
160.0 /	18.37654C(25, 4)	16.02477 (316, 7)	14.10968 (316, 7)	11.25950 (316, 7)	3.92111C(119, 8)
150.0 /	24.36744 (76, 1)	19.55235 (76, 1)	17.37837 (127, 7)	14.92943 (127, 7)	4.02945 (115, 7)
140.0 /	20.79975 (303, 1)	17.13983 (303, 1)	13.07777 (303, 1)	10.57791 (284, 7)	4.18754 (248, 7)
130.0 /	20.79985 (299, 7)	17.29794 (141, 7)	15.92111 (141, 7)	13.57799 (141, 7)	6.53931 (64, 1)
120.0 /	19.71297 (276, 6)	17.49103 (336, 7)	14.25006 (336, 7)	13.44009 (201, 1)	4.97699 (201, 1)
110.0 /	20.79975C(191, 3)	17.17248 (351, 7)	19.74491 (351, 7)	19.57817 (351, 7)	6.39714 (351, 7)
100.0 /	18.46906 (51, 2)	14.82009 (51, 2)	12.45131 (226, 7)	10.84405 (112, 1)	4.83785 (112, 1)
90.0 /	17.59922 (51, 2)	15.92729 (51, 2)	12.86041 (51, 2)	10.35569C(213, 2)	4.18753C(213, 2)
80.0 /	24.01997 (282, 6)	18.30785 (282, 6)	14.45917 (183, 2)	13.23208 (183, 2)	3.95623 (183, 2)
70.0 /	22.69424 (253, 6)	18.26227 (253, 6)	13.73939 (253, 6)	11.69689 (181, 7)	3.73360 (325, 1)
60.0 /	21.19147 (212, 3)	14.55071 (212, 3)	15.57678 (183, 1)	16.97741 (183, 1)	6.63689 (183, 1)
50.0 /	33.90508 (3, 6)	25.56302 (3, 6)	18.44817 (3, 6)	12.69911 (3, 6)	4.63479 (61, 8)
40.0 /	19.65414 (358, 4)	18.14379 (322, 3)	15.85483 (322, 3)	16.14498C(231, 2)	6.17573C(231, 2)
30.0 /	21.38715 (185, 4)	18.43790 (225, 7)	15.55457 (185, 1)	13.87470 (191, 8)	5.24758 (191, 8)
20.0 /	24.95487 (52, 5)	19.02555 (52, 5)	15.43866 (102, 7)	12.20194 (102, 7)	3.29107 (4, 8)
10.0 /	26.81223 (37, 6)	21.35979 (37, 6)	15.96856 (37, 6)	11.31298 (37, 6)	4.18753 (353, 8)
360.0 /	29.34880 (52, 1)	27.00174 (52, 1)	22.08299 (52, 1)	16.78639 (52, 1)	3.61543 (36, 7)

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2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *

* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 43.68492 AND OCCURRED AT (185.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	32.97695 (194, 4)	29.30080 (194, 4)	25.75648 (206, 3)	28.62692 (214, 3)	28.08538 (206, 3)
340.0 /	30.98035 (165, 4)	30.07260 (232, 5)	25.19109 (194, 4)	23.87842C(240, 3)	24.52043 (1, 3)
330.0 /	22.86762 (281, 4)	23.36030 (281, 4)	30.30169 (41, 3)	28.13698 (331, 3)	27.85963 (331, 3)
320.0 /	30.93522 (164, 5)	31.95508 (164, 5)	27.49635 (272, 4)	23.08085 (75, 2)	24.11697 (141, 3)
310.0 /	36.03529 (282, 4)	36.89989 (286, 4)	35.25932 (286, 4)	27.42526 (286, 4)	30.12037 (171, 2)
300.0 /	36.84462 (189, 4)	40.92965 (286, 4)	36.40388 (238, 5)	27.94529 (276, 4)	26.09762C(53, 3)
290.0 /	28.29750 (243, 5)	28.16420 (315, 4)	26.05946 (186, 4)	21.47754 (178, 3)	23.39881 (68, 3)
280.0 /	33.18548 (238, 5)	29.74197 (143, 4)	26.46833 (315, 4)	25.52790 (2, 3)	26.64501 (186, 7)
270.0 /	33.40128 (257, 4)	34.39410C(176, 5)	27.72264 (243, 5)	33.37588 (320, 3)	26.37346 (235, 6)
260.0 /	34.96249 (260, 4)	35.37857 (260, 4)	31.90298 (258, 5)	26.80412 (258, 5)	25.32795 (69, 1)
250.0 /	32.78740 (260, 4)	33.31300 (237, 4)	31.08970 (67, 4)	27.44520 (260, 3)	26.96282 (260, 3)
240.0 /	28.98953 (245, 4)	36.91534 (245, 4)	36.25776 (245, 4)	37.53273 (316, 3)	34.04171 (76, 3)
230.0 /	31.60541 (292, 5)	31.98271 (293, 4)	29.72879 (304, 5)	27.96535 (317, 3)	26.38597 (317, 3)
220.0 /	27.51419 (178, 5)	25.06046 (100, 4)	24.09083 (325, 5)	22.90119 (361, 5)	22.77537 (350, 6)
210.0 /	24.54992 (149, 4)	25.77488 (293, 6)	25.69197 (143, 3)	23.51600 (143, 3)	18.92339 (294, 3)
200.0 /	24.90908 (325, 4)	25.77487 (308, 5)	25.48752 (289, 3)	25.06665 (306, 5)	28.59157 (289, 3)
190.0 /	25.25720 (108, 4)	26.90385C(237, 6)	24.50436 (11, 5)	22.19372 (289, 4)	19.79450 (307, 1)
180.0 /	24.54593 (144, 5)	30.74412 (288, 4)	28.86654 (236, 4)	24.87003 (288, 4)	20.67182C(236, 3)
170.0 /	23.98996 (43, 5)	25.16357 (101, 4)	25.08935 (363, 4)	20.79897 (177, 5)	19.44118 (288, 4)
160.0 /	24.98718 (289, 5)	26.51911 (289, 4)	24.97325 (363, 5)	18.78950 (44, 6)	16.60257 (44, 6)
150.0 /	26.89754 (177, 5)	26.74604 (319, 5)	25.69198 (203, 6)	21.72337 (76, 1)	20.74873 (266, 6)
140.0 /	25.47981C(195, 5)	25.77489 (163, 6)	24.65362 (204, 5)	21.16971 (289, 5)	17.83484 (13, 4)
130.0 /	20.09964C(195, 5)	24.94526 (189, 6)	29.35340 (189, 6)	21.76346 (113, 6)	19.89751 (189, 6)
120.0 /	25.73204 (246, 5)	27.83864 (189, 6)	32.85204 (189, 6)	29.21049 (189, 6)	23.50499 (177, 6)
110.0 /	25.15033 (175, 4)	36.51760 (177, 6)	35.83257 (192, 6)	30.83114 (359, 5)	23.78640 (359, 5)
100.0 /	30.06722 (179, 5)	30.12861 (274, 5)	31.85923 (229, 5)	27.67093 (229, 5)	21.06595 (229, 5)
90.0 /	34.31304 (273, 5)	35.56987 (273, 5)	30.13407 (158, 6)	24.97989 (157, 6)	19.02126 (157, 6)
80.0 /	43.68492 (234, 5)	40.77649 (234, 5)	39.01482 (276, 5)	26.95074 (276, 5)	27.44571 (282, 6)
70.0 /	42.09978 (255, 4)	39.58480 (255, 4)	30.83590 (255, 4)	22.64332 (249, 6)	21.22292C(320, 6)
60.0 /	35.90377 (97, 4)	37.09462 (38, 5)	36.38965 (212, 3)	25.35389 (249, 6)	20.75621 (249, 6)
50.0 /	32.24348 (250, 4)	29.20511 (250, 4)	31.44368 (351, 6)	33.28239 (351, 6)	29.58763 (351, 6)
40.0 /	37.17222C(244, 5)	29.26652C(244, 5)	26.93200C(101, 3)	24.69791C(101, 3)	20.95168 (358, 4)
30.0 /	34.61202 (170, 4)	39.06764 (195, 4)	32.90640 (195, 4)	24.39714 (265, 6)	22.08479 (170, 4)
20.0 /	28.41820 (202, 4)	27.72793 (195, 4)	24.18481 (102, 4)	23.62850 (37, 4)	24.65642 (70, 3)
10.0 /	30.66267 (102, 4)	31.03623 (102, 4)	25.68879 (321, 4)	22.15112 (321, 4)	20.67184 (335, 1)
360.0 /	27.78701 (216, 4)	28.62793 (216, 4)	26.61667 (160, 3)	24.39714 (160, 3)	26.68890 (52, 1)

1

2ND HIGH
3-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 43.68492 AND OCCURRED AT (185.0, 80.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0

350.0 /	25.33613 (182, 3)	19.52294 (4, 3)	14.58524 (4, 3)	10.51105 (37, 1)	4.18753 (141, 1)
340.0 /	22.79281 (1, 3)	18.00393 (1, 3)	13.31747 (1, 3)	10.38969 (160, 1)	3.75697 (73, 7)
330.0 /	23.93845 (331, 3)	18.71175C(165, 1)	16.60825C(165, 1)	15.65782 (41, 3)	4.18753C(209, 1)
320.0 /	22.86239 (141, 3)	19.84760 (299, 1)	17.41096 (299, 1)	13.84287 (299, 1)	3.88986 (139, 2)
310.0 /	29.64914 (335, 4)	23.61856 (335, 4)	17.62351 (331, 2)	15.18414 (171, 2)	4.18753C(161, 1)
300.0 /	22.60015C(53, 3)	20.23125 (39, 2)	18.27336 (39, 2)	15.28716 (192, 7)	5.68810C(198, 1)
290.0 /	21.97796 (343, 1)	19.49184 (309, 2)	17.59492 (257, 1)	17.55176 (353, 6)	5.14873C(121, 1)
280.0 /	24.95180 (186, 7)	20.86196 (165, 7)	17.68832 (2, 3)	15.02141 (281, 3)	4.90196 (297, 1)
270.0 /	24.40574 (132, 3)	19.63129 (132, 3)	15.14580 (134, 2)	13.87470 (311, 2)	4.53384 (312, 2)
260.0 /	23.93597 (69, 1)	19.34002 (311, 3)	16.01823 (311, 3)	15.33891 (281, 1)	5.24759 (315, 2)
250.0 /	23.47132 (260, 3)	20.74383 (252, 1)	18.39985 (252, 1)	14.75385 (252, 1)	5.66637 (95, 2)
240.0 /	26.77575 (25, 2)	21.33638 (25, 2)	15.87329 (25, 2)	11.58214 (262, 7)	3.95031 (262, 7)
230.0 /	22.33948 (364, 8)	17.54819 (158, 3)	13.73856 (364, 8)	12.63413 (89, 1)	4.33997 (21, 2)
220.0 /	22.88188 (150, 3)	20.04495 (292, 1)	16.81915 (292, 1)	13.83475 (242, 7)	4.18753 (244, 1)
210.0 /	18.37694 (310, 3)	15.05193 (310, 3)	11.41309 (310, 3)	8.95520 (176, 2)	3.86941 (33, 8)
200.0 /	24.98300 (289, 3)	19.86434 (289, 3)	15.28112 (364, 3)	11.84953 (364, 3)	3.07826 (289, 3)
190.0 /	18.47795 (307, 1)	14.70474 (307, 1)	13.46790 (289, 2)	10.98850 (288, 6)	4.18753C(157, 2)
180.0 /	20.16585C(236, 3)	16.59238C(236, 3)	12.64031C(236, 3)	10.88890 (307, 7)	3.47636 (282, 7)
170.0 /	16.10255 (76, 1)	13.09807 (76, 1)	9.92803 (76, 1)	8.95515 (279, 8)	3.47635 (279, 8)
160.0 /	15.61192 (5, 3)	15.05172C(25, 4)	11.41299C(25, 4)	8.95515 (286, 7)	3.47635 (286, 7)
150.0 /	18.23955 (184, 6)	18.58892 (127, 7)	14.61285 (76, 1)	10.31564 (76, 1)	3.95694 (142, 8)
140.0 /	15.73671 (221, 7)	12.79233 (221, 7)	10.98626C(49, 3)	10.35622 (248, 7)	4.07582C(20, 8)
130.0 /	18.37656 (237, 8)	17.13988 (299, 7)	14.39866 (200, 7)	12.99935 (200, 7)	3.97346 (200, 7)
120.0 /	18.99090 (336, 7)	15.57607 (20, 6)	13.32925 (129, 2)	12.02206 (129, 2)	4.05774C(38, 7)
110.0 /	20.66788 (177, 6)	17.13983C(191, 3)	13.81582 (229, 7)	12.46034 (59, 1)	4.93153 (59, 1)
100.0 /	15.73665 (221, 7)	14.46034 (226, 7)	11.09171 (51, 2)	9.87657 (226, 7)	3.16053 (96, 7)
90.0 /	15.61193C(168, 5)	12.67979C(168, 5)	9.70471 (19, 3)	9.64815 (51, 2)	3.21228 (3, 8)
80.0 /	20.72459 (331, 6)	15.62643 (331, 6)	13.24654 (282, 6)	10.61209 (282, 7)	3.47638C(309, 7)
70.0 /	18.60525C(320, 6)	14.56041 (202, 7)	12.41961 (181, 7)	10.70161 (325, 1)	3.66267 (181, 7)
60.0 /	15.65687 (249, 6)	12.51850 (323, 3)	10.51340 (323, 3)	8.98124 (211, 7)	2.91603 (211, 7)
50.0 /	28.27157C(1, 6)	22.86210C(1, 6)	17.17296C(1, 6)	12.53820 (70, 7)	4.19089 (70, 7)
40.0 /	19.26626 (75, 6)	15.65534 (358, 4)	14.80364C(231, 2)	12.62775 (322, 3)	4.51485 (54, 1)
30.0 /	20.16587 (227, 3)	17.58835 (185, 1)	15.02207 (225, 7)	12.47380 (185, 1)	3.75595 (37, 7)
20.0 /	23.27313 (70, 3)	18.67570 (70, 3)	14.01374 (70, 3)	10.61208 (331, 1)	2.56688 (70, 1)
10.0 /	20.16586 (335, 1)	16.59239 (335, 1)	12.64032 (335, 1)	10.35569 (353, 8)	3.85432 (50, 1)
360.0 /	26.67845 (345, 4)	21.33694 (345, 4)	16.02997 (345, 4)	11.42364 (345, 4)	3.31065 (52, 1)

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 32.84125 AND OCCURRED AT (185.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	13.23872 (126, 2)	13.27559 (126, 2)	11.86027 (206, 2)	10.56918 (182, 1)	11.07417 (4, 2)
340.0 /	15.61655 (194, 2)	16.61230 (194, 2)	14.62856 (194, 2)	11.97525 (232, 2)	12.33492 (232, 3)
330.0 /	12.19655 (281, 2)	13.85163 (281, 2)	14.13660 (329, 2)	12.14446 (329, 2)	13.89358 (249, 2)
320.0 /	16.44715 (286, 2)	19.23364 (286, 2)	17.71216 (286, 2)	13.28632 (286, 2)	16.13782 (75, 1)
310.0 /	25.36727 (286, 2)	28.50421 (286, 2)	25.49514 (286, 2)	18.77399 (286, 2)	15.31093 (171, 1)
300.0 /	32.84125C(189, 2)	29.99015C(189, 2)	23.26352 (286, 2)	16.51116 (286, 2)	10.99862 (286, 2)
290.0 /	27.54291C(189, 2)	24.93399C(189, 2)	19.47728 (315, 2)	13.96280 (315, 2)	14.32133 (353, 2)
280.0 /	20.74976 (315, 2)	23.92562 (315, 2)	21.96180 (315, 2)	18.10934 (327, 2)	14.95975 (327, 2)

270.0 /	23.89529 (188, 2)	24.17693 (188, 2)	23.31088C(235, 2)	18.53025C(235, 2)	14.38590C(235, 3)
260.0 /	21.84073 (188, 2)	24.92369 (258, 2)	23.67652 (258, 2)	18.31430 (258, 2)	13.00096 (258, 2)
250.0 /	25.08871 (260, 2)	29.10361 (260, 2)	26.89120 (260, 2)	20.43501 (260, 2)	18.00310 (351, 1)
240.0 /	23.55640C(237, 2)	24.34175C(245, 2)	25.03811C(245, 2)	20.45762C(245, 2)	19.38323C(188, 1)
230.0 /	18.73744 (174, 2)	23.57667 (293, 2)	24.24692 (293, 2)	20.75910 (293, 2)	16.15655 (293, 2)
220.0 /	21.25089 (293, 2)	24.52021 (293, 2)	22.33781 (293, 2)	19.32114 (361, 2)	21.13686 (361, 2)
210.0 /	16.66136 (293, 2)	19.60653 (12, 2)	20.62862 (12, 2)	18.48510 (294, 2)	16.48518 (294, 2)
200.0 /	17.43816 (325, 2)	17.74447 (325, 2)	14.61581 (325, 2)	15.23132 (306, 2)	17.72045 (306, 2)
190.0 /	12.33970C(237, 3)	14.22249C(237, 3)	14.14752C(237, 3)	12.65864C(237, 3)	11.36532 (307, 1)
180.0 /	11.24250 (289, 2)	13.20045C(237, 3)	14.03133 (236, 2)	14.59760 (236, 2)	13.60784 (303, 1)
170.0 /	14.41414 (289, 2)	15.10782 (289, 2)	14.66967 (363, 2)	11.88374 (363, 2)	11.21631 (288, 2)
160.0 /	18.65897 (289, 2)	19.75500 (289, 2)	16.62008 (289, 2)	14.92847 (5, 2)	17.10038 (5, 2)
150.0 /	17.26149 (289, 2)	18.76055 (289, 2)	17.62282 (169, 2)	13.59327 (169, 2)	12.16687C(54, 2)
140.0 /	13.70173 (142, 2)	14.14398 (142, 2)	12.98519 (200, 2)	10.51884 (103, 2)	8.57071 (103, 2)
130.0 /	15.61134C(246, 2)	16.31802C(246, 2)	14.14695 (229, 2)	12.08847 (229, 2)	9.88220 (27, 1)
120.0 /	12.32802C(217, 2)	16.44269 (229, 2)	17.03918 (229, 2)	14.02030 (229, 2)	12.54066C(277, 3)
110.0 /	14.53765 (326, 2)	16.80954 (229, 2)	18.85600C(177, 3)	16.85325C(177, 3)	13.03256C(177, 3)
100.0 /	17.65943 (129, 2)	20.87140 (227, 2)	20.21931 (227, 2)	15.94956 (229, 2)	14.38768C(160, 3)
90.0 /	31.06856C(278, 2)	31.66874C(278, 2)	26.11798C(278, 2)	19.14013 (227, 2)	13.60069 (227, 2)
80.0 /	26.87916C(278, 2)	27.28162C(278, 2)	22.37690C(278, 2)	15.28404C(278, 2)	14.61087C(282, 3)
70.0 /	26.74692 (171, 2)	27.26132 (171, 2)	22.79499 (171, 2)	15.83906 (171, 2)	11.32770 (98, 3)
60.0 /	24.95985 (171, 2)	26.87225 (171, 2)	23.73457 (171, 2)	17.41560 (171, 2)	11.92304 (171, 2)
50.0 /	21.09129 (199, 2)	20.95180 (199, 2)	16.89547 (199, 2)	15.46074 (3, 3)	14.93601 (3, 3)
40.0 /	20.06396 (199, 2)	21.74828C(170, 2)	19.91871C(170, 2)	14.97430C(170, 2)	12.46933C(25, 2)
30.0 /	18.58683C(195, 2)	19.54267C(195, 2)	17.19992C(170, 2)	16.34144 (185, 2)	15.88887 (185, 2)
20.0 /	22.36510 (214, 2)	22.71309 (214, 2)	18.68111 (214, 2)	15.47344 (283, 2)	13.49889 (52, 2)
10.0 /	16.58432 (206, 2)	17.24759 (102, 2)	15.94849 (102, 2)	12.98184 (70, 2)	10.35373 (70, 2)
360.0 /	16.52613 (206, 2)	17.51611 (206, 2)	15.26399 (206, 2)	11.75801C(283, 3)	13.89635C(52, 1)

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HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 32.84125 AND OCCURRED AT (185.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	10.65132 (4, 2)	9.36842 (358, 1)	7.47598 (358, 1)	5.77282 (37, 1)	2.17178C(30, 1)
340.0 /	13.44714 (232, 3)	12.31719 (232, 3)	10.01665 (232, 3)	7.55151 (232, 3)	1.81183C(164, 1)
330.0 /	14.34694 (41, 1)	13.18152 (41, 1)	11.22318 (41, 1)	9.03276C(205, 1)	3.15444C(205, 1)
320.0 /	16.32393 (75, 1)	14.12395 (75, 1)	11.18572 (75, 1)	8.31958 (75, 1)	2.16913 (150, 1)
310.0 /	14.48303 (331, 1)	13.14040C(241, 1)	10.91893C(241, 1)	8.68951 (71, 1)	3.51841 (71, 1)
300.0 /	10.39987C(209, 1)	10.19215 (272, 3)	10.77167 (272, 3)	10.35039 (272, 3)	3.56225C(198, 1)
290.0 /	14.29522 (333, 1)	12.74063 (333, 1)	10.21307 (333, 1)	10.97651C(257, 1)	4.14507C(257, 1)
280.0 /	14.22161C(174, 1)	14.78383C(174, 1)	13.61246C(174, 1)	11.58292C(174, 1)	3.47635C(288, 1)
270.0 /	14.06839 (132, 1)	12.51494 (132, 1)	10.12585 (132, 1)	7.82873C(137, 1)	2.45017C(137, 1)
260.0 /	11.28911 (69, 1)	9.13503C(281, 1)	9.64431 (315, 1)	9.67357 (315, 1)	3.30487 (315, 1)
250.0 /	17.22305 (351, 1)	13.95310 (351, 1)	13.27204 (263, 1)	13.33687 (263, 1)	4.63734 (263, 1)
240.0 /	18.67109C(188, 1)	15.91246C(188, 1)	12.46560C(188, 1)	9.31240 (261, 1)	3.07382 (261, 1)
230.0 /	11.99455 (361, 2)	10.08341 (340, 3)	8.41484 (303, 3)	8.70202 (89, 1)	3.65772 (89, 1)
220.0 /	19.23520 (361, 2)	15.07293 (361, 2)	11.14432 (361, 2)	8.28523 (294, 1)	3.31886 (294, 1)
210.0 /	13.35447 (294, 2)	9.72489 (294, 2)	6.97178 (301, 2)	7.01833 (361, 3)	2.70634 (361, 3)
200.0 /	16.61101 (306, 2)	13.21690 (306, 2)	9.82987 (306, 2)	6.91445 (306, 2)	1.57640C(364, 1)

190.0 /	10.62044 (307, 1)	8.45891 (307, 1)	6.83968C(288, 3)	7.20949C(113, 1)	3.01845C(113, 1)
180.0 /	12.93553 (303, 1)	10.42150 (303, 1)	7.79215 (303, 1)	5.48715 (303, 1)	1.75122 (307, 3)
170.0 /	10.39987C(194, 3)	8.56991C(194, 3)	6.53888C(194, 3)	4.71203C(194, 3)	1.43559C(25, 3)
160.0 /	15.92193 (5, 2)	12.65695 (5, 2)	9.45252 (5, 2)	6.69305 (5, 2)	1.68048C(119, 3)
150.0 /	11.56978C(54, 2)	9.36664C(127, 3)	8.34683C(127, 3)	6.95305C(127, 3)	1.77637C(115, 3)
140.0 /	7.79990 (303, 1)	6.45697 (133, 3)	5.44170C(239, 3)	5.01101C(121, 3)	1.87288C(121, 3)
130.0 /	9.32652C(141, 3)	10.31368C(141, 3)	10.10333C(141, 3)	9.03999C(141, 3)	3.26965C(64, 1)
120.0 /	12.43285C(277, 3)	10.78455C(277, 3)	8.53997 (336, 3)	6.45660 (336, 3)	2.02887C(38, 3)
110.0 /	13.24885C(229, 3)	13.30452C(229, 3)	11.40982C(229, 3)	9.78908C(351, 3)	3.19857C(351, 3)
100.0 /	12.06876C(160, 3)	9.58201C(163, 3)	7.61454C(163, 3)	6.74633 (112, 1)	2.90091 (112, 1)
90.0 /	9.07516 (227, 2)	7.07833C(219, 3)	5.23275C(219, 3)	5.17787C(213, 1)	2.09376C(213, 1)
80.0 /	16.01966C(282, 3)	14.79731C(282, 3)	12.13570C(282, 3)	9.23574C(282, 3)	2.07654C(309, 3)
70.0 /	12.28714 (98, 3)	11.20022 (98, 3)	9.09006 (98, 3)	6.84946 (98, 3)	1.71277 (184, 1)
60.0 /	11.16490 (212, 1)	9.42888 (212, 1)	7.34450 (212, 1)	6.38032 (183, 1)	2.48935 (183, 1)
50.0 /	12.71440 (3, 3)	9.58613 (3, 3)	7.07740 (211, 1)	6.04218 (53, 3)	1.87944C(62, 1)
40.0 /	10.29170 (49, 2)	7.78290 (49, 2)	7.40182C(231, 1)	8.07249C(231, 1)	3.08787C(231, 1)
30.0 /	13.62893 (185, 2)	10.82009 (210, 3)	8.17417 (210, 3)	5.82601 (210, 3)	1.96784 (191, 3)
20.0 /	11.89303 (52, 2)	10.41020 (4, 3)	9.81915 (4, 3)	8.43978 (4, 3)	2.15122 (4, 3)
10.0 /	9.20122C(39, 3)	7.89699C(39, 3)	8.25567 (50, 1)	7.90217 (50, 1)	2.55025 (50, 1)
360.0 /	14.82990C(52, 1)	13.30570C(52, 1)	10.70553C(52, 1)	8.02921C(52, 1)	1.68672 (36, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.45776 AND OCCURRED AT (185.0, 300.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	12.54763 (194, 2)	12.25441 (206, 2)	10.91848 (75, 2)	9.51505 (75, 2)	10.78393 (182, 1)
340.0 /	12.94644 (281, 2)	14.75943 (281, 2)	13.38432 (281, 2)	10.68613 (194, 2)	11.49660C(103, 1)
330.0 /	11.72640 (148, 2)	13.02810 (150, 2)	13.16951 (150, 2)	11.48587 (249, 2)	13.71277 (41, 1)
320.0 /	16.11865 (272, 2)	16.51447 (272, 2)	14.38771 (224, 2)	12.98336 (75, 1)	10.39138 (225, 1)
310.0 /	24.12937C(189, 2)	21.97670C(189, 2)	20.49580 (328, 2)	17.66963 (328, 2)	15.22109 (331, 1)
300.0 /	27.45776 (238, 2)	27.36039 (238, 2)	22.87125C(189, 2)	15.63990 (238, 2)	10.64750C(209, 1)
290.0 /	26.30555 (238, 2)	24.73224 (238, 2)	19.44199 (238, 2)	13.67836 (353, 2)	13.69312 (343, 1)
280.0 /	19.26756 (188, 2)	19.43494 (188, 2)	19.50126 (327, 2)	16.58798 (315, 2)	12.14039 (186, 3)
270.0 /	19.29547C(235, 2)	23.87918C(235, 2)	19.75722 (188, 2)	14.64511 (314, 2)	13.91623 (69, 1)
260.0 /	21.60023 (260, 2)	23.38033 (260, 2)	20.35051 (260, 2)	14.64343 (260, 2)	12.53168 (69, 1)
250.0 /	19.59816C(235, 2)	21.80101 (258, 2)	20.90565 (258, 2)	16.25693 (258, 2)	17.01484C(364, 3)
240.0 /	19.69881C(235, 2)	22.00833C(237, 2)	21.73779 (292, 2)	18.32853 (292, 2)	15.40306 (9, 1)
230.0 /	18.30062 (293, 2)	17.48821 (292, 2)	16.01783 (292, 2)	16.38323 (361, 2)	14.89314 (361, 2)
220.0 /	13.84031 (174, 2)	11.79754 (88, 2)	13.74922 (362, 2)	16.63124 (293, 2)	15.75589 (300, 2)
210.0 /	13.79213 (12, 2)	18.69406 (293, 2)	18.30632 (294, 2)	17.16616 (12, 2)	14.43999 (301, 2)
200.0 /	11.64750 (108, 2)	12.93680 (107, 2)	12.10674 (107, 2)	11.00477 (87, 2)	12.20116C(24, 1)
190.0 /	12.11118 (325, 2)	12.26487 (325, 2)	11.35069 (289, 2)	10.66522 (11, 2)	10.54082C(237, 3)
180.0 /	10.51969C(144, 2)	12.43257 (236, 2)	13.76201C(237, 3)	11.53971 (303, 1)	13.60475 (236, 2)
170.0 /	11.66844 (177, 2)	14.44890 (363, 2)	12.66159 (44, 2)	11.62259 (288, 2)	10.64750C(194, 3)
160.0 /	14.38216 (169, 2)	16.34800 (169, 2)	14.71263 (169, 2)	11.53398 (289, 2)	10.34924C(25, 2)
150.0 /	15.60917 (169, 2)	18.66064 (169, 2)	16.11091 (289, 2)	11.75800C(203, 3)	10.25890C(60, 1)
140.0 /	13.13589C(246, 2)	13.58388 (200, 2)	12.33352C(204, 2)	10.14820 (200, 2)	7.98563 (303, 1)
130.0 /	12.12724 (142, 2)	13.64586 (142, 2)	13.63924C(246, 2)	11.13727C(189, 3)	9.45817C(54, 2)
120.0 /	12.05041 (229, 2)	13.20695C(217, 2)	14.07944C(189, 3)	12.51878C(189, 3)	10.31167 (229, 2)

110.0 /	13.09568 (229, 2)	15.93682C(359, 2)	18.46304C(359, 2)	16.26183C(359, 2)	12.48010C(359, 2)
100.0 /	16.79158C(278, 2)	19.90554 (129, 2)	19.18707 (229, 2)	15.83469 (227, 2)	12.34920C(197, 3)
90.0 /	21.62052 (227, 2)	26.03814 (227, 2)	24.71789 (227, 2)	17.96874C(278, 2)	11.74857C(278, 2)
80.0 /	21.11325 (199, 2)	21.21362 (276, 2)	18.76345 (276, 2)	13.69860 (276, 2)	9.92075C(278, 2)
70.0 /	23.35687 (277, 2)	24.83886 (277, 2)	21.18425 (277, 2)	14.93655 (277, 2)	10.39569 (51, 3)
60.0 /	21.28768 (277, 2)	24.08180 (277, 2)	21.73320 (277, 2)	16.17028 (277, 2)	11.80291 (212, 1)
50.0 /	18.06364 (250, 2)	15.61915 (250, 2)	13.93803C(351, 2)	12.14059C(351, 2)	9.82361C(229, 1)
40.0 /	18.85147C(170, 2)	20.87195 (199, 2)	17.42746 (199, 2)	13.87428C(25, 2)	11.95741 (49, 2)
30.0 /	18.32088 (214, 2)	18.58075 (214, 2)	16.45900C(195, 2)	13.33529C(170, 2)	13.99973 (210, 3)
20.0 /	15.69920 (240, 2)	15.89493 (240, 2)	16.80706 (321, 2)	14.60218 (70, 2)	12.75922 (70, 2)
10.0 /	15.86950 (181, 2)	16.06064 (181, 2)	15.02126 (70, 2)	12.11589 (102, 2)	9.99020 (346, 2)
360.0 /	15.24359 (234, 2)	14.59530 (234, 2)	12.84600C(283, 3)	11.26423 (299, 2)	12.72400 (345, 2)

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2ND HIGH
8-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.45776 AND OCCURRED AT (185.0, 300.0) *

DIRECTION / (DEGREES) /	722.0	962.0	RANGE (METERS) 1258.0	1665.0	6000.0
350.0 /	10.58201 (358, 1)	8.61668 (4, 2)	6.45098 (4, 2)	5.57205 (358, 1)	1.85137 (161, 3)
340.0 /	10.92595C(103, 1)	8.82025C(103, 1)	6.64679C(103, 1)	5.14774C(164, 1)	1.68702 (160, 1)
330.0 /	13.43046 (249, 2)	10.98296 (249, 2)	8.95757C(205, 1)	9.01009 (41, 1)	2.27868 (36, 1)
320.0 /	10.60231 (299, 1)	11.05218 (299, 1)	9.62116 (299, 1)	7.61710 (299, 1)	2.16487 (139, 1)
310.0 /	14.27083 (171, 1)	11.67970 (331, 1)	8.89016 (171, 1)	8.40938C(241, 1)	2.49019 (160, 1)
300.0 /	10.12963 (169, 3)	9.94690 (169, 3)	8.63494C(215, 3)	9.33341C(198, 1)	3.34349 (272, 3)
290.0 /	13.48011 (343, 1)	11.29345 (343, 1)	10.14922C(257, 1)	10.18906C(267, 1)	3.80036C(267, 1)
280.0 /	11.61120 (165, 3)	11.38047 (165, 3)	9.58325 (165, 3)	8.95513C(288, 1)	3.03753C(174, 1)
270.0 /	12.85085C(235, 3)	10.13534C(235, 3)	8.27149C(137, 1)	7.67551 (132, 1)	2.14340C(286, 1)
260.0 /	10.39987C(178, 1)	8.78397 (69, 1)	9.55407C(245, 1)	9.17368C(245, 1)	2.98654C(245, 1)
250.0 /	16.38510C(364, 3)	13.33137C(364, 3)	10.49913 (351, 1)	8.40297 (251, 1)	2.91058 (251, 1)
240.0 /	14.15166 (9, 1)	11.30459C(173, 3)	9.71220 (261, 1)	9.16123C(188, 1)	2.78154 (251, 1)
230.0 /	11.69988 (293, 2)	9.09787C(364, 3)	8.13595 (340, 3)	7.56748 (303, 3)	2.50990 (21, 1)
220.0 /	14.57971 (300, 2)	11.42272 (300, 2)	9.16569 (292, 1)	7.82227 (361, 2)	2.76696C(293, 1)
210.0 /	12.64750 (301, 2)	9.62663 (301, 2)	6.85681 (294, 2)	4.80122 (301, 2)	1.48988C(176, 1)
200.0 /	11.59623C(24, 1)	9.35775C(24, 1)	7.04871C(24, 1)	5.06478C(364, 1)	1.45911 (363, 1)
190.0 /	8.17301C(237, 3)	7.71448C(288, 3)	6.62954C(113, 1)	6.42573C(157, 1)	2.30384C(157, 1)
180.0 /	11.45656 (236, 2)	8.61628 (236, 2)	6.22406 (236, 2)	4.47758C(282, 3)	1.73818C(282, 3)
170.0 /	9.68407 (302, 3)	7.62817 (302, 3)	5.62243 (302, 3)	4.00341 (279, 3)	1.39659 (279, 3)
160.0 /	9.41291C(25, 2)	7.40524C(25, 2)	5.48024C(25, 2)	4.22231 (316, 3)	1.60613C(117, 1)
150.0 /	9.63380C(127, 3)	9.34114C(54, 2)	7.03910C(54, 2)	5.01955C(54, 2)	1.74972C(127, 3)
140.0 /	6.74430C(221, 3)	6.42743 (303, 1)	5.42734 (133, 3)	4.91518 (196, 3)	1.75811C(20, 3)
130.0 /	9.18828C(237, 3)	8.37898C(278, 3)	6.90422 (200, 3)	5.99706C(64, 1)	2.51628C(141, 3)
120.0 /	11.17997 (336, 3)	10.42438 (336, 3)	8.53724C(277, 3)	6.32645C(277, 3)	1.86654 (201, 1)
110.0 /	10.39987C(191, 1)	8.58624C(351, 3)	9.87245C(351, 3)	8.95639C(229, 3)	2.46577C(59, 1)
100.0 /	11.15804C(163, 3)	9.02485C(160, 3)	6.46443C(160, 3)	5.68985C(163, 3)	1.31190C(213, 1)
90.0 /	9.05180C(219, 3)	6.68857C(168, 2)	5.00112C(168, 2)	3.74239 (63, 3)	1.51083C(13, 1)
80.0 /	9.68781 (183, 1)	9.52674 (183, 1)	8.54365 (183, 1)	7.14893 (183, 1)	1.82358 (183, 1)
70.0 /	9.94482 (51, 3)	8.11138 (51, 3)	6.95095 (184, 1)	6.08608 (184, 1)	1.45124 (181, 3)
60.0 /	8.19633 (322, 2)	6.77994 (50, 3)	6.41881 (50, 3)	5.60576 (50, 3)	1.53930 (50, 3)
50.0 /	10.18429C(229, 1)	8.87867C(229, 1)	7.01870C(229, 1)	5.74287 (211, 1)	1.79617C(70, 3)
40.0 /	10.04729C(25, 2)	7.24971C(25, 2)	5.68034C(329, 3)	5.43474C(159, 1)	1.95395C(159, 1)

30.0 /	13.32941 (210, 3)	10.32737 (185, 2)	7.51230 (225, 3)	5.78840 (37, 3)	1.78714 (37, 3)
20.0 /	10.14467 (70, 2)	9.12192 (52, 2)	7.36790 (70, 1)	5.83613 (70, 1)	1.26754 (70, 1)
10.0 /	8.64251C(335, 1)	7.63580 (50, 1)	6.16245C(39, 3)	5.58140C(354, 1)	1.64388C(354, 1)
360.0 /	11.86344 (345, 2)	9.45340 (345, 2)	7.08256 (345, 2)	5.47020 (36, 3)	1.51746C(52, 1)

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HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 13.00316 AND OCCURRED AT (315.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	5.57672C(194, 1)	5.46243C(206, 1)	6.05531C(206, 1)	5.90611C(206, 1)	5.68668C(52, 1)
340.0 /	6.94069C(194, 1)	7.38325C(194, 1)	6.50158C(194, 1)	7.02818 (232, 1)	7.21034 (232, 1)
330.0 /	4.84481 (148, 1)	5.51933 (148, 1)	5.44238 (41, 1)	6.76914 (41, 1)	6.98285 (41, 1)
320.0 /	5.98078C(286, 1)	6.99405C(286, 1)	7.43231C(215, 1)	6.77893C(215, 1)	5.88769C(215, 1)
310.0 /	9.22446C(286, 1)	10.36517C(286, 1)	9.27096C(286, 1)	7.15783C(220, 1)	6.79483C(172, 1)
300.0 /	12.21700C(238, 1)	12.30590C(238, 1)	10.59896C(238, 1)	7.97586C(238, 1)	6.24302C(353, 1)
290.0 /	11.69141C(238, 1)	10.99410C(238, 1)	8.66582C(238, 1)	5.82777C(135, 1)	6.70310C(353, 1)
280.0 /	9.14663C(188, 1)	9.96682C(188, 1)	8.72392C(188, 1)	6.52578C(94, 1)	5.75658C(165, 1)
270.0 /	10.15835C(188, 1)	11.99157C(235, 1)	13.00316C(235, 1)	11.95462C(235, 1)	10.01179C(235, 1)
260.0 /	9.20876C(188, 1)	9.31714C(188, 1)	8.55080 (258, 1)	7.25732 (258, 1)	6.02080C(178, 1)
250.0 /	8.40194 (260, 1)	10.04603 (260, 1)	10.12015 (260, 1)	8.96554 (260, 1)	8.59473C(351, 1)
240.0 /	7.85225C(237, 1)	8.11392C(245, 1)	8.65036 (89, 1)	7.92986 (89, 1)	7.77082 (318, 1)
230.0 /	8.13622C(293, 1)	10.48301C(293, 1)	10.78123C(293, 1)	9.23102C(293, 1)	7.78929 (8, 1)
220.0 /	9.44485C(293, 1)	10.89931C(293, 1)	9.96202C(293, 1)	11.05999 (361, 1)	12.91884 (361, 1)
210.0 /	7.40505C(293, 1)	8.30848C(293, 1)	7.38300C(293, 1)	6.16640 (294, 1)	5.56153C(301, 1)
200.0 /	5.83546 (325, 1)	6.11047 (325, 1)	5.50900 (325, 1)	7.23080 (306, 1)	8.44566 (306, 1)
190.0 /	4.20953C(108, 1)	4.74393C(237, 1)	4.71753C(237, 1)	5.14869 (11, 1)	4.80145 (11, 1)
180.0 /	4.39633C(236, 1)	5.52559C(236, 1)	6.23615C(236, 1)	6.48782C(236, 1)	6.52576 (303, 1)
170.0 /	5.18597C(177, 1)	5.41344C(177, 1)	4.99107C(44, 1)	5.16560C(288, 1)	4.98503C(288, 1)
160.0 /	6.22042 (289, 1)	6.59236 (289, 1)	5.58659 (289, 1)	5.24172C(5, 1)	6.03162C(5, 1)
150.0 /	5.77292 (289, 1)	6.95102 (169, 1)	6.70457 (169, 1)	5.23894 (169, 1)	4.93713C(54, 1)
140.0 /	7.02451C(142, 1)	7.85278C(142, 1)	7.95882C(161, 1)	7.31163C(161, 1)	5.91580C(161, 1)
130.0 /	6.12039C(246, 1)	6.42380C(246, 1)	6.83279C(200, 1)	6.36791C(200, 1)	5.47470C(200, 1)
120.0 /	4.92480C(236, 1)	6.22840C(229, 1)	7.00822C(229, 1)	7.06875C(228, 1)	6.83834C(20, 1)
110.0 /	5.31181C(205, 1)	6.37004C(229, 1)	7.16419C(177, 1)	6.90776C(229, 1)	6.80102C(229, 1)
100.0 /	7.65547C(227, 1)	9.93555C(227, 1)	10.52520C(160, 1)	9.68063C(160, 1)	7.97924C(160, 1)
90.0 /	10.35619C(278, 1)	11.03434C(227, 1)	10.48883C(227, 1)	8.12986C(227, 1)	5.77945C(227, 1)
80.0 /	9.19556C(234, 1)	9.09387C(278, 1)	7.56610C(277, 1)	6.30684 (183, 1)	5.96371 (183, 1)
70.0 /	10.56757C(171, 1)	11.03949C(277, 1)	9.41522C(277, 1)	7.19891 (202, 1)	6.24103 (202, 1)
60.0 /	9.52495C(171, 1)	10.70302C(277, 1)	9.65920C(277, 1)	7.18679C(277, 1)	5.93566 (58, 1)
50.0 /	8.43651C(199, 1)	8.38072C(199, 1)	6.75819C(199, 1)	6.84529C(3, 1)	6.15005C(3, 1)
40.0 /	8.02558C(199, 1)	8.34878C(199, 1)	6.97099C(199, 1)	5.60473C(25, 1)	5.47196C(49, 1)
30.0 /	9.06152C(214, 1)	10.15973C(214, 1)	9.13457C(214, 1)	7.24049 (185, 1)	7.96534 (185, 1)
20.0 /	9.95700C(214, 1)	10.48654C(214, 1)	8.91453C(214, 1)	6.82269C(70, 1)	6.96767C(70, 1)
10.0 /	6.98287C(206, 1)	7.26454C(102, 1)	6.74192C(102, 1)	5.53551 (37, 1)	5.51781 (37, 1)
360.0 /	6.95906C(206, 1)	7.38156C(206, 1)	6.44732C(206, 1)	5.25553C(1, 1)	5.25576C(52, 1)

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HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 13.00316 AND OCCURRED AT (315.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	5.32995C(52, 1)	4.21545C(52, 1)	3.10338C(52, 1)	2.37879C(161, 1)	.82283C(161, 1)
340.0 /	6.68360 (232, 1)	5.52955 (232, 1)	4.25307 (232, 1)	3.08010 (232, 1)	.65264C(73, 1)
330.0 /	6.48646 (41, 1)	5.49426 (41, 1)	4.44820 (41, 1)	3.43980 (41, 1)	1.16352C(205, 1)
320.0 /	6.01927C(335, 1)	5.73317C(335, 1)	4.77554C(335, 1)	3.66744C(335, 1)	.79634C(215, 1)
310.0 /	6.11108C(172, 1)	4.79192C(172, 1)	3.72085C(241, 1)	3.08044 (71, 1)	1.19692 (71, 1)
300.0 /	6.35897C(353, 1)	5.76391C(353, 1)	4.91102C(353, 1)	4.12183 (272, 1)	1.22090 (272, 1)
290.0 /	6.80843C(353, 1)	6.01966C(353, 1)	4.83843C(353, 1)	3.63254C(353, 1)	1.17226C(257, 1)
280.0 /	6.36003C(165, 1)	5.87211C(165, 1)	4.79600C(165, 1)	3.62865C(165, 1)	1.15878C(288, 1)
270.0 /	7.81796C(235, 1)	6.31401 (312, 1)	5.38762 (312, 1)	4.35143 (312, 1)	1.22638C(286, 1)
260.0 /	5.03442C(178, 1)	4.20156C(245, 1)	4.08656C(245, 1)	3.93873 (242, 1)	1.38839 (242, 1)
250.0 /	7.78901C(351, 1)	6.22366 (263, 1)	7.03906 (263, 1)	6.97828 (263, 1)	2.38168 (263, 1)
240.0 /	7.42217 (318, 1)	6.17743 (318, 1)	4.85764 (318, 1)	3.84986C(251, 1)	1.11670C(251, 1)
230.0 /	7.14634 (8, 1)	5.61289 (8, 1)	4.74589 (292, 1)	3.78191 (292, 1)	1.31866C(21, 1)
220.0 /	12.62662 (361, 1)	10.70787 (361, 1)	8.39422 (361, 1)	6.19643 (361, 1)	1.13924 (294, 1)
210.0 /	5.20704C(301, 1)	4.28065C(301, 1)	3.28543C(301, 1)	2.68385 (361, 1)	.94693 (361, 1)
200.0 /	7.94317 (306, 1)	6.34070 (306, 1)	4.72905 (306, 1)	3.33631 (306, 1)	.60457C(364, 1)
190.0 /	4.12541 (81, 1)	3.48477 (289, 1)	3.03325 (289, 1)	3.03056C(113, 1)	1.29525C(113, 1)
180.0 /	6.38867 (303, 1)	5.30770 (303, 1)	4.05588 (303, 1)	2.90993 (303, 1)	.59856 (307, 1)
170.0 /	4.26548C(288, 1)	3.55463 (302, 1)	2.80452 (302, 1)	2.07247 (302, 1)	.62940C(279, 1)
160.0 /	5.64861C(5, 1)	4.51742C(5, 1)	3.38394C(5, 1)	2.39889C(5, 1)	.65867C(119, 1)
150.0 /	4.61000C(54, 1)	4.00848C(60, 1)	3.49192C(60, 1)	2.94082C(60, 1)	.81936C(60, 1)
140.0 /	4.39335C(161, 1)	2.96419C(161, 1)	2.28251 (99, 1)	1.99030 (99, 1)	.69001C(121, 1)
130.0 /	4.71753C(229, 1)	4.05690C(229, 1)	3.36932C(200, 1)	2.97092C(13, 1)	1.12228C(64, 1)
120.0 /	6.30303C(20, 1)	5.15889C(20, 1)	3.96755C(20, 1)	2.88942C(20, 1)	1.00846 (66, 1)
110.0 /	6.45042C(229, 1)	5.59341C(229, 1)	4.74674C(228, 1)	4.23246C(228, 1)	1.25068C(228, 1)
100.0 /	6.08464C(160, 1)	4.23009C(160, 1)	2.88392C(160, 1)	2.24888 (112, 1)	.96697 (112, 1)
90.0 /	5.06730C(65, 1)	4.22108C(65, 1)	3.24593C(65, 1)	2.52540 (201, 1)	.76497C(213, 1)
80.0 /	5.39486 (183, 1)	4.72423C(282, 1)	3.78140 (183, 1)	2.96724 (183, 1)	.66807 (183, 1)
70.0 /	5.84652C(98, 1)	5.11457C(98, 1)	4.06491C(98, 1)	3.01974C(98, 1)	.73737 (183, 1)
60.0 /	5.74059 (58, 1)	4.81487 (58, 1)	3.99485 (322, 1)	3.19070 (322, 1)	.93463 (183, 1)
50.0 /	5.57432 (51, 1)	4.79592 (51, 1)	3.90535 (51, 1)	3.02978 (51, 1)	.70886C(53, 1)
40.0 /	4.77699C(49, 1)	4.04223C(231, 1)	3.96794C(231, 1)	3.63012C(231, 1)	1.10907C(231, 1)
30.0 /	7.68310 (185, 1)	6.49992 (185, 1)	5.08279 (185, 1)	3.74308 (185, 1)	.79191C(191, 1)
20.0 /	6.51864C(70, 1)	5.49644C(70, 1)	4.31520C(70, 1)	3.48903 (4, 1)	.81046 (4, 1)
10.0 /	4.76415 (37, 1)	3.60688 (37, 1)	3.01228 (50, 1)	2.79211 (50, 1)	.86545 (50, 1)
360.0 /	5.43825C(52, 1)	4.75076C(52, 1)	3.75383C(52, 1)	2.77267C(52, 1)	.81098 (36, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 12.26577 AND OCCURRED AT (555.0, 220.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 185.0	241.0	315.0	426.0	555.0
350.0 /	5.55160C(234, 1)	5.02094C(194, 1)	4.54868C(1, 1)	5.36944C(1, 1)	5.42126 (232, 1)
340.0 /	4.93198C(281, 1)	5.62264C(281, 1)	5.93988 (232, 1)	5.67603C(1, 1)	5.60804C(1, 1)
330.0 /	4.64630C(281, 1)	5.29005C(194, 1)	5.12961C(329, 1)	5.10483C(249, 1)	6.17492C(249, 1)
320.0 /	5.37564 (272, 1)	6.73883C(215, 1)	6.44079C(286, 1)	5.60701 (224, 1)	5.52329 (75, 1)
310.0 /	8.44528C(189, 1)	7.69184C(189, 1)	7.54313C(220, 1)	6.82705C(286, 1)	6.40626 (77, 1)
300.0 /	11.49444C(189, 1)	10.49655C(189, 1)	8.50209 (272, 1)	7.14907 (272, 1)	6.22995C(193, 1)
290.0 /	9.64022C(189, 1)	8.72719C(189, 1)	6.63729C(188, 1)	5.77360C(238, 1)	5.30300C(343, 1)
280.0 /	6.91839 (315, 1)	7.99091 (315, 1)	7.37026 (315, 1)	6.38540 (327, 1)	5.70676C(2, 1)
270.0 /	8.91196C(235, 1)	10.34148C(188, 1)	8.49396C(188, 1)	8.28835C(154, 1)	8.11760C(154, 1)
260.0 /	8.27989C(235, 1)	9.18399C(235, 1)	8.14443C(235, 1)	7.08572C(168, 1)	5.66891 (258, 1)
250.0 /	7.65135C(235, 1)	9.23841C(271, 1)	9.24619C(271, 1)	7.99962C(351, 1)	7.57518 (260, 1)
240.0 /	7.66070C(235, 1)	7.92482 (89, 1)	8.34604C(245, 1)	7.85456C(264, 1)	7.32648 (9, 1)
230.0 /	6.82419C(174, 1)	6.05389 (292, 1)	6.20401 (292, 1)	6.93655 (8, 1)	7.18962C(364, 1)
220.0 /	5.05088C(174, 1)	5.49910 (88, 1)	6.69174 (361, 1)	10.08007C(300, 1)	12.26577C(300, 1)
210.0 /	4.79727C(12, 1)	6.81968C(12, 1)	7.17523C(12, 1)	5.97091C(12, 1)	5.52297 (294, 1)
200.0 /	5.17666C(108, 1)	5.28736C(108, 1)	5.26206C(87, 1)	4.89101C(87, 1)	5.51558 (303, 1)
190.0 /	4.11743C(237, 1)	4.22513 (289, 1)	4.56889 (11, 1)	4.72683 (81, 1)	4.63746 (81, 1)
180.0 /	4.01439C(288, 1)	5.17539C(288, 1)	5.27718C(288, 1)	5.38980 (303, 1)	6.04655C(236, 1)
170.0 /	4.80471 (289, 1)	5.13757C(44, 1)	4.88991 (363, 1)	3.96127 (363, 1)	4.05373 (302, 1)
160.0 /	5.96852C(177, 1)	5.51212C(177, 1)	4.92753 (169, 1)	4.33522 (43, 1)	3.94304 (43, 1)
150.0 /	5.63064 (169, 1)	6.40657 (289, 1)	5.86958 (289, 1)	4.96025 (43, 1)	4.85069 (43, 1)
140.0 /	5.77741C(246, 1)	6.94348C(161, 1)	7.05336C(142, 1)	5.33607C(200, 1)	3.89040C(142, 1)
130.0 /	5.50432C(142, 1)	6.32124C(200, 1)	6.03575C(236, 1)	5.26019C(229, 1)	5.05484C(229, 1)
120.0 /	4.41119C(229, 1)	5.57532C(236, 1)	6.54107C(228, 1)	6.55535C(229, 1)	6.37885C(228, 1)
110.0 /	5.11901C(129, 1)	6.16854C(160, 1)	6.92147C(229, 1)	6.35995C(177, 1)	5.99575C(191, 1)
100.0 /	6.73929C(194, 1)	9.43729C(160, 1)	10.20981C(227, 1)	8.68009C(227, 1)	6.70710C(227, 1)
90.0 /	9.20502C(194, 1)	10.55625C(278, 1)	8.70599C(278, 1)	7.18005C(158, 1)	5.60985C(158, 1)
80.0 /	8.95972C(278, 1)	8.79706C(234, 1)	7.45896C(278, 1)	5.66757C(277, 1)	5.33112C(282, 1)
70.0 /	10.38083C(277, 1)	11.00095C(171, 1)	9.36475C(171, 1)	6.63847C(277, 1)	5.80939C(98, 1)
60.0 /	9.46119C(277, 1)	10.26243C(171, 1)	9.06736C(171, 1)	6.65333C(171, 1)	4.97380C(277, 1)
50.0 /	8.02829C(250, 1)	6.94184C(250, 1)	6.72870C(3, 1)	5.31618C(351, 1)	5.76032 (51, 1)
40.0 /	6.28382C(170, 1)	7.24943C(170, 1)	6.63957C(170, 1)	5.36083C(49, 1)	5.22355C(25, 1)
30.0 /	6.63081C(240, 1)	6.73994C(287, 1)	5.73331C(170, 1)	6.78840C(214, 1)	6.50033C(52, 1)
20.0 /	6.97742C(240, 1)	7.06441C(240, 1)	6.63104C(283, 1)	6.29295C(214, 1)	6.37699C(52, 1)
10.0 /	6.25276C(102, 1)	6.59291C(206, 1)	5.38258 (216, 1)	5.21134C(102, 1)	3.97104 (4, 1)
360.0 /	6.77493C(234, 1)	6.48680C(234, 1)	5.13675C(234, 1)	4.66782C(206, 1)	4.82725C(1, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** IWTS Case 2 (1,000 acfm) -- 1986 ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 12.26577 AND OCCURRED AT (555.0, 220.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 722.0	962.0	1258.0	1665.0	6000.0
350.0 /	5.00572 (4, 1)	4.03985 (4, 1)	3.02638 (4, 1)	2.20607C(207, 1)	.63636 (37, 1)
340.0 /	4.79955C(1, 1)	3.81682 (334, 1)	2.95156 (334, 1)	2.41014C(73, 1)	.64274C(160, 1)
330.0 /	5.96909C(249, 1)	4.88132C(249, 1)	3.70718C(249, 1)	3.35717C(205, 1)	.77237 (36, 1)
320.0 /	5.53484 (75, 1)	4.98921 (344, 1)	4.08451C(225, 1)	3.32003C(225, 1)	.77636C(225, 1)

310.0 /	5.77564 (77, 1)	4.61165C(241, 1)	3.55221C(172, 1)	2.92520C(160, 1)	.96761C(160, 1)
300.0 /	5.60525C(193, 1)	5.04143C(145, 1)	4.54241 (272, 1)	4.00300C(353, 1)	1.09290C(198, 1)
290.0 /	5.17229 (224, 1)	4.57807 (224, 1)	3.74333 (224, 1)	3.41730C(270, 1)	1.12152C(270, 1)
280.0 /	5.41754C(2, 1)	4.40213C(174, 1)	3.92865C(174, 1)	3.54942 (223, 1)	1.10382 (223, 1)
270.0 /	7.01263 (312, 1)	5.58366C(235, 1)	3.98138C(132, 1)	3.43165C(286, 1)	.99451 (312, 1)
260.0 /	4.72077 (296, 1)	3.76962C(178, 1)	3.81303 (305, 1)	3.66363C(245, 1)	1.14694 (305, 1)
250.0 /	6.52685 (260, 1)	6.10534C(351, 1)	5.02773 (260, 1)	4.23314 (260, 1)	1.21952 (262, 1)
240.0 /	6.72581 (9, 1)	5.32243C(188, 1)	4.52152C(264, 1)	3.79877C(264, 1)	1.04856C(221, 1)
230.0 /	6.53462C(364, 1)	5.58341 (292, 1)	4.35883C(86, 1)	3.57430C(86, 1)	1.25402 (89, 1)
220.0 /	12.11169C(300, 1)	10.19891C(300, 1)	7.90781C(300, 1)	5.78149C(300, 1)	1.12781 (361, 1)
210.0 /	4.59451 (294, 1)	3.72504C(300, 1)	2.87863C(300, 1)	2.38218C(301, 1)	.65218C(33, 1)
200.0 /	5.42505 (303, 1)	4.53782 (303, 1)	3.49349 (303, 1)	2.55691 (338, 1)	.59875C(44, 1)
190.0 /	4.01442 (11, 1)	3.47023C(288, 1)	2.84175C(288, 1)	2.45126 (289, 1)	.65885C(12, 1)
180.0 /	5.09181C(236, 1)	3.82946C(236, 1)	2.76625C(236, 1)	1.90997C(236, 1)	.57939C(284, 1)
170.0 /	4.10660 (302, 1)	3.22990C(288, 1)	2.34571C(288, 1)	1.88883C(279, 1)	.49886C(21, 1)
160.0 /	3.30196C(25, 1)	2.59936C(25, 1)	1.92390C(25, 1)	1.67955 (337, 1)	.61616 (337, 1)
150.0 /	4.41775C(60, 1)	3.87821C(54, 1)	3.13658C(54, 1)	2.43818C(54, 1)	.71158C(142, 1)
140.0 /	3.32212 (27, 1)	2.82751 (27, 1)	2.22774 (27, 1)	1.87245C(196, 1)	.68378C(20, 1)
130.0 /	4.65095C(200, 1)	3.94136C(200, 1)	3.21887C(229, 1)	2.79390C(200, 1)	1.06241C(13, 1)
120.0 /	5.11902C(228, 1)	4.13924 (336, 1)	3.32866 (336, 1)	2.48267 (336, 1)	.68919C(38, 1)
110.0 /	5.49860C(191, 1)	5.01889C(228, 1)	4.46096C(229, 1)	3.33681C(229, 1)	.91392C(351, 1)
100.0 /	4.82902C(227, 1)	3.46103C(228, 1)	2.73458C(228, 1)	2.02429C(228, 1)	.45634C(213, 1)
90.0 /	4.08475C(158, 1)	3.41636 (201, 1)	2.97249 (201, 1)	2.34672C(65, 1)	.71552 (201, 1)
80.0 /	5.36925C(282, 1)	4.60599 (183, 1)	3.77815C(282, 1)	2.82562C(282, 1)	.62442C(309, 1)
70.0 /	5.15451 (51, 1)	4.15229 (183, 1)	3.59817 (183, 1)	2.96390 (183, 1)	.58628 (184, 1)
60.0 /	4.84969 (322, 1)	4.64259 (322, 1)	3.73597 (58, 1)	2.76765 (183, 1)	.66188 (322, 1)
50.0 /	5.01557C(3, 1)	4.19195C(211, 1)	3.59136C(211, 1)	2.86133C(211, 1)	.66617C(62, 1)
40.0 /	4.42681C(358, 1)	3.90446C(358, 1)	3.09881C(358, 1)	2.28985C(358, 1)	.59959C(159, 1)
30.0 /	6.40428C(52, 1)	5.37680C(52, 1)	4.14558C(52, 1)	3.00195C(52, 1)	.69017 (185, 1)
20.0 /	5.69331C(52, 1)	4.88699 (4, 1)	4.27475 (4, 1)	3.19647C(70, 1)	.59647C(70, 1)
10.0 /	3.65434C(39, 1)	3.07043C(39, 1)	2.60545 (37, 1)	2.04279C(49, 1)	.57103C(353, 1)
360.0 /	4.46545 (345, 1)	3.54644 (345, 1)	2.75886 (36, 1)	2.62120 (36, 1)	.49837C(52, 1)

RUN ENDED ON 10-19-90 AT 16:32:42

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-43

INPUFF MODEL RUN FOR NO_x

FROM

INORGANIC WASTE TREATMENT SYSTEM STACK UNDER UPSET CONDITIONS

INPUFF 2.3 MULTIPLE SOURCE INTEGRATED PUFF MODEL

Inorganic Waste Treatment System Stack --- NOx Emissions Under Upset Conditions

M O D E L O P T I O N S   A "T" INDICATES THAT THE OPTION HAS BEEN EXERCISED

USER SUPPLIED WIND FIELD	F
UNIT 22 OUTPUT OPTION	F
PRINT PUFF INFORMATION	T
INTERMEDIATE CONCENTRATIONS	T

DISPERSION CALCULATED USING PASQUILL-GIFFORD (DISTANCE DEPENDENT) SIGMA CURVES, WITH TRANSITION TO DRAXLER'S LONG RANGE TRANSPORT SIGMA-Y AT SYMAX = 1000.0 METERS.

B E G I N A N A L Y S I S O F S O U R C E N U M B E R 1

S O U R C E O P T I O N S   A "T" INDICATES THAT THE OPTION HAS BEEN EXERCISED

STACK DOWNWASH	F
BUOYANCY INDUCED DISPERSION	F
DEPOSITION AND SETTLING	F
USER PLUME RISE	F
PERFORM PUFF COMBINATIONS	T

I N P U T P A R A M E T E R S

SOURCE UPDATE INTERVAL = 6 SECONDS. (-1 INDICATES NO UPDATE)
START CONCENTRATION CALCULATIONS AT TIME = 0 SECONDS.
ANEMOMETER HEIGHT = 10.0 METERS.

* * * I N F O R M A T I O N F O R S O U R C E N U M B E R 1 * * *

SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	COORD. AT TIME 0 SECONDS EAST (KM)	NORTH (KM)
.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	20.000

SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	PLUME HEIGHT (M)	INITIAL SIGMAS (R) (M)	(Z) (M)	DEPOSITION VELOCITY (CM/SEC)	SETTLING VELOCITY (CM/SEC)
0.000	0.0	35.49	1.5	1.5	0.00	0.00

* * * S O U R C E U P D A T E T A B L E * * *

TIME (SEC)	SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	INITIAL SIGMAS (R) (M)	(Z) (M)
0	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
6	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
12	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
18	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
24	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
30	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
36	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
42	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

48	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
54	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
60	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
66	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
72	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
78	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
84	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
90	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
96	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
102	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
108	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
114	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
120	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
126	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
132	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
138	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
144	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
150	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
156	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
162	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
168	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
174	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
180	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
186	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
192	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
198	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
204	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
210	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
216	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
222	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
228	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
234	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
240	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
246	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
252	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
258	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
264	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
270	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
276	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
282	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
288	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
294	.162E+02	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
300	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
306	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
312	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
318	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
324	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
330	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
336	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
342	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
348	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
354	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
360	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
366	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
372	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
378	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
384	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
390	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
396	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
402	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
408	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
414	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
420	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
426	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
432	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
438	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
444	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
450	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
456	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
462	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
468	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
474	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

480	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
486	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
492	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
498	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
504	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
510	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
516	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
522	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
528	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
534	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
540	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
546	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
552	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
558	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
564	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
570	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
576	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
582	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
588	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
594	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

*** M E T E O R O L O G Y ***

WIND DIR. (DEG)	WIND SPD. (M/SEC)	MIXING HGT. (M)	PROF.EP (DIMEN)	STABILITY (CLASS)	U PLUME (M/SEC)	TEMP (K)	SIGMA TH. (RAD.)	SIGMA PH. (RAD.)
270.0	3.000	1500.	0.150	4	3.628	290.0	0.1750	0.1120

SIMULATION PERIOD START (SEC)	SIMULATION PERIOD STOP (SEC)	SIMULATION TIME (SEC)	PUFF RELEASE RATE (SEC)	SOURCE RECEPTOR DISTANCE (KM)	PUFF COMB. CRITERION (SIGMAS)
0	600	600	6.000	0.20	1.000

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 0 TO 6 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 6 TO 12 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 12 TO 18 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 18 TO 24 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 24 TO 30 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 30 TO 36 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 36 TO 42 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.482E-16
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 42 TO 48 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.720E-10
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 48 TO 54 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.184E-07
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 54 TO 60 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.831E-06
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 60 TO 66 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	4.486E-06
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 66 TO 72 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.585E-06
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01

1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 72 TO 78 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.792E-06
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 78 TO 84 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.817E-06
0.400	20.000	0.000	3.130E-11
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 84 TO 90 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	1.145E-08
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 90 TO 96 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.818E-06
0.400	20.000	0.000	2.004E-07
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 96 TO 102 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	4.682E-06
0.650	20.000	0.000	0.000E-01

0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 102 TO 108 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	3.219E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 108 TO 114 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	9.294E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 114 TO 120 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	1.525E-04
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 120 TO 126 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.818E-06
0.400	20.000	0.000	1.801E-04
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 126 TO 132 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	1.978E-04
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 132 TO 138 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.067E-04
0.650	20.000	0.000	2.096E-10
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 138 TO 144 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.120E-04
0.650	20.000	0.000	9.845E-09
0.700	20.000	0.000	9.742E-12
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 144 TO 150 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.130E-04
0.650	20.000	0.000	1.942E-07
0.700	20.000	0.000	6.790E-10
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 150 TO 156 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.077E-04
0.650	20.000	0.000	9.763E-07
0.700	20.000	0.000	6.060E-09
0.750	20.000	0.000	7.117E-12
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 156 TO 162 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.082E-04
0.650	20.000	0.000	6.936E-06
0.700	20.000	0.000	1.204E-07
0.750	20.000	0.000	4.447E-10
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 162 TO 168 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.111E-04
0.650	20.000	0.000	2.906E-05
0.700	20.000	0.000	1.237E-06
0.750	20.000	0.000	1.249E-08
0.800	20.000	0.000	2.975E-11
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 168 TO 174 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	7.937E-05
0.700	20.000	0.000	7.349E-06
0.750	20.000	0.000	1.796E-07
0.800	20.000	0.000	1.140E-09
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 174 TO 180 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.081E-04
0.650	20.000	0.000	1.545E-04
0.700	20.000	0.000	2.774E-05
0.750	20.000	0.000	1.475E-06
0.800	20.000	0.000	2.229E-08
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 180 TO 186 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.054E-04
0.650	20.000	0.000	2.333E-04
0.700	20.000	0.000	7.216E-05
0.750	20.000	0.000	7.559E-06
0.800	20.000	0.000	2.464E-07
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 186 TO 192 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.088E-04
0.650	20.000	0.000	2.951E-04
0.700	20.000	0.000	1.394E-04
0.750	20.000	0.000	2.612E-05
0.800	20.000	0.000	1.680E-06
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 192 TO 198 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.125E-04
0.650	20.000	0.000	3.340E-04
0.700	20.000	0.000	2.140E-04
0.750	20.000	0.000	6.512E-05
0.800	20.000	0.000	7.608E-06
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 198 TO 204 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.132E-04
0.650	20.000	0.000	3.558E-04
0.700	20.000	0.000	2.782E-04
0.750	20.000	0.000	1.246E-04
0.800	20.000	0.000	2.438E-05
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 204 TO 210 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.084E-04
0.650	20.000	0.000	3.677E-04
0.700	20.000	0.000	3.234E-04
0.750	20.000	0.000	1.936E-04
0.800	20.000	0.000	5.851E-05
1.000	20.000	0.000	6.109E-11

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 210 TO 216 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.818E-06
0.400	20.000	0.000	2.078E-04
0.650	20.000	0.000	3.713E-04
0.700	20.000	0.000	3.512E-04
0.750	20.000	0.000	2.574E-04
0.800	20.000	0.000	1.108E-04

1.000	20.000	0.000	1.069E-09

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 216 TO 222 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.725E-04
0.700	20.000	0.000	3.666E-04
0.750	20.000	0.000	3.065E-04
0.800	20.000	0.000	1.736E-04
1.000	20.000	0.000	1.210E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 222 TO 228 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.764E-04
0.700	20.000	0.000	3.739E-04
0.750	20.000	0.000	3.394E-04
0.800	20.000	0.000	2.351E-04
1.000	20.000	0.000	9.355E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 228 TO 234 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.112E-04
0.650	20.000	0.000	3.846E-04
0.700	20.000	0.000	3.772E-04
0.750	20.000	0.000	3.592E-04
0.800	20.000	0.000	2.859E-04
1.000	20.000	0.000	5.181E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 234 TO 240 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	3.915E-04
0.700	20.000	0.000	3.813E-04
0.750	20.000	0.000	3.698E-04
0.800	20.000	0.000	3.227E-04
1.000	20.000	0.000	2.144E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 240 TO 246 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.800E-04

0.700	20.000	0.000	3.881E-04
0.750	20.000	0.000	3.847E-04
0.800	20.000	0.000	3.599E-04
1.000	20.000	0.000	3.535E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 246 TO 252 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.778E-04
0.700	20.000	0.000	3.870E-04
0.750	20.000	0.000	3.877E-04
0.800	20.000	0.000	3.704E-04
1.000	20.000	0.000	1.122E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 252 TO 258 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.112E-04
0.650	20.000	0.000	3.764E-04
0.700	20.000	0.000	3.858E-04
0.750	20.000	0.000	3.879E-04
0.800	20.000	0.000	3.777E-04
1.000	20.000	0.000	2.837E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 258 TO 264 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	3.767E-04
0.700	20.000	0.000	3.839E-04
0.750	20.000	0.000	3.871E-04
0.800	20.000	0.000	3.817E-04
1.000	20.000	0.000	5.874E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 264 TO 270 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.081E-04
0.650	20.000	0.000	3.782E-04
0.700	20.000	0.000	3.825E-04
0.750	20.000	0.000	3.859E-04
0.800	20.000	0.000	3.830E-04
1.000	20.000	0.000	1.023E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 270 TO 276 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	5.818E-06
0.400	20.000	0.000	2.080E-04
0.650	20.000	0.000	4.101E-04
0.700	20.000	0.000	3.782E-04
0.750	20.000	0.000	3.735E-04
0.800	20.000	0.000	3.811E-04
1.000	20.000	0.000	1.537E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 276 TO 282 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	4.035E-04
0.700	20.000	0.000	3.972E-04
0.750	20.000	0.000	3.706E-04
0.800	20.000	0.000	3.770E-04
1.000	20.000	0.000	2.047E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 282 TO 288 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.883E-04
0.700	20.000	0.000	4.098E-04
0.750	20.000	0.000	3.778E-04
0.800	20.000	0.000	3.714E-04
1.000	20.000	0.000	2.484E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 288 TO 294 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.112E-04
0.650	20.000	0.000	3.768E-04
0.700	20.000	0.000	4.082E-04
0.750	20.000	0.000	3.925E-04
0.800	20.000	0.000	3.688E-04
1.000	20.000	0.000	2.818E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 294 TO 300 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	3.730E-04
0.700	20.000	0.000	3.972E-04
0.750	20.000	0.000	4.044E-04
0.800	20.000	0.000	3.737E-04
1.000	20.000	0.000	3.054E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 300 TO 306 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.734E-04
0.700	20.000	0.000	3.803E-04
0.750	20.000	0.000	3.933E-04
0.800	20.000	0.000	3.890E-04
1.000	20.000	0.000	3.147E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 306 TO 312 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.768E-04
0.700	20.000	0.000	3.776E-04
0.750	20.000	0.000	3.883E-04
0.800	20.000	0.000	3.893E-04
1.000	20.000	0.000	3.219E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 312 TO 318 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.112E-04
0.650	20.000	0.000	3.796E-04
0.700	20.000	0.000	3.787E-04
0.750	20.000	0.000	3.824E-04
0.800	20.000	0.000	3.885E-04
1.000	20.000	0.000	3.276E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 318 TO 324 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	3.812E-04
0.700	20.000	0.000	3.815E-04
0.750	20.000	0.000	3.791E-04
0.800	20.000	0.000	3.847E-04
1.000	20.000	0.000	3.344E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 324 TO 330 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.081E-04
0.650	20.000	0.000	3.821E-04
0.700	20.000	0.000	3.842E-04
0.750	20.000	0.000	3.790E-04
0.800	20.000	0.000	3.798E-04
1.000	20.000	0.000	3.422E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 330 TO 336 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.054E-04
0.650	20.000	0.000	3.832E-04
0.700	20.000	0.000	4.037E-04
0.750	20.000	0.000	3.880E-04
0.800	20.000	0.000	3.827E-04
1.000	20.000	0.000	3.488E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 336 TO 342 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.088E-04
0.650	20.000	0.000	3.740E-04
0.700	20.000	0.000	4.011E-04
0.750	20.000	0.000	3.945E-04
0.800	20.000	0.000	3.826E-04
1.000	20.000	0.000	3.521E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 342 TO 348 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.819E-06
0.400	20.000	0.000	2.125E-04
0.650	20.000	0.000	3.716E-04
0.700	20.000	0.000	3.917E-04
0.750	20.000	0.000	4.006E-04
0.800	20.000	0.000	3.841E-04
1.000	20.000	0.000	3.521E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 348 TO 354 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.701E-06
0.400	20.000	0.000	2.132E-04
0.650	20.000	0.000	3.737E-04
0.700	20.000	0.000	3.828E-04
0.750	20.000	0.000	3.999E-04
0.800	20.000	0.000	3.890E-04
1.000	20.000	0.000	3.498E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 354 TO 360 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	3.989E-06
0.400	20.000	0.000	2.084E-04
0.650	20.000	0.000	3.770E-04
0.700	20.000	0.000	3.789E-04
0.750	20.000	0.000	3.932E-04
0.800	20.000	0.000	3.939E-04

1.000	20.000	0.000	3.467E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 360 TO 366 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.332E-06
0.400	20.000	0.000	2.078E-04
0.650	20.000	0.000	3.707E-04
0.700	20.000	0.000	4.010E-04
0.750	20.000	0.000	3.947E-04
0.800	20.000	0.000	3.838E-04
1.000	20.000	0.000	3.441E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 366 TO 372 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.341E-07
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.657E-04
0.700	20.000	0.000	3.907E-04
0.750	20.000	0.000	4.006E-04
0.800	20.000	0.000	3.847E-04
1.000	20.000	0.000	3.426E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 372 TO 378 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.702E-08
0.400	20.000	0.000	2.083E-04
0.650	20.000	0.000	3.694E-04
0.700	20.000	0.000	3.799E-04
0.750	20.000	0.000	3.998E-04
0.800	20.000	0.000	3.893E-04
1.000	20.000	0.000	3.424E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 378 TO 384 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.439E-09
0.400	20.000	0.000	2.112E-04
0.650	20.000	0.000	3.797E-04
0.700	20.000	0.000	3.739E-04
0.750	20.000	0.000	3.923E-04
0.800	20.000	0.000	3.940E-04
1.000	20.000	0.000	3.427E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 384 TO 390 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.938E-10
0.400	20.000	0.000	2.123E-04
0.650	20.000	0.000	3.887E-04

0.700	20.000	0.000	3.755E-04
0.750	20.000	0.000	3.830E-04
0.800	20.000	0.000	3.941E-04
1.000	20.000	0.000	3.432E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 390 TO 396 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	7.425E-12
0.400	20.000	0.000	2.035E-04
0.650	20.000	0.000	3.905E-04
0.700	20.000	0.000	3.832E-04
0.750	20.000	0.000	3.767E-04
0.800	20.000	0.000	3.889E-04
1.000	20.000	0.000	3.437E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 396 TO 402 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.007E-04
0.650	20.000	0.000	3.866E-04
0.700	20.000	0.000	3.913E-04
0.750	20.000	0.000	3.765E-04
0.800	20.000	0.000	3.812E-04
1.000	20.000	0.000	3.443E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 402 TO 408 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.766E-04
0.650	20.000	0.000	3.821E-04
0.700	20.000	0.000	3.944E-04
0.750	20.000	0.000	3.819E-04
0.800	20.000	0.000	3.752E-04
1.000	20.000	0.000	3.448E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 408 TO 414 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.195E-04
0.650	20.000	0.000	3.798E-04
0.700	20.000	0.000	3.925E-04
0.750	20.000	0.000	3.887E-04
0.800	20.000	0.000	3.738E-04
1.000	20.000	0.000	3.453E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 414 TO 420 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	6.065E-05
0.650	20.000	0.000	3.797E-04
0.700	20.000	0.000	3.889E-04
0.750	20.000	0.000	3.924E-04
0.800	20.000	0.000	3.772E-04
1.000	20.000	0.000	3.463E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 420 TO 426 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.303E-05
0.650	20.000	0.000	3.860E-04
0.700	20.000	0.000	4.112E-04
0.750	20.000	0.000	3.872E-04
0.800	20.000	0.000	3.735E-04
1.000	20.000	0.000	3.480E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 426 TO 432 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	7.466E-06
0.650	20.000	0.000	3.726E-04
0.700	20.000	0.000	4.073E-04
0.750	20.000	0.000	3.988E-04
0.800	20.000	0.000	3.759E-04
1.000	20.000	0.000	3.499E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 432 TO 438 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.071E-06
0.650	20.000	0.000	3.665E-04
0.700	20.000	0.000	3.950E-04
0.750	20.000	0.000	4.070E-04
0.800	20.000	0.000	3.821E-04
1.000	20.000	0.000	3.508E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 438 TO 444 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	5.106E-07
0.650	20.000	0.000	3.697E-04
0.700	20.000	0.000	3.825E-04
0.750	20.000	0.000	4.059E-04
0.800	20.000	0.000	3.915E-04
1.000	20.000	0.000	3.497E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 444 TO 450 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.156E-07
0.650	20.000	0.000	3.797E-04
0.700	20.000	0.000	3.752E-04
0.750	20.000	0.000	3.970E-04
0.800	20.000	0.000	3.990E-04
1.000	20.000	0.000	3.468E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 450 TO 456 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.459E-08
0.650	20.000	0.000	3.868E-04
0.700	20.000	0.000	3.748E-04
0.750	20.000	0.000	3.797E-04
0.800	20.000	0.000	3.870E-04
1.000	20.000	0.000	3.577E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 456 TO 462 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	5.020E-09
0.650	20.000	0.000	3.803E-04
0.700	20.000	0.000	3.827E-04
0.750	20.000	0.000	3.749E-04
0.800	20.000	0.000	3.833E-04
1.000	20.000	0.000	3.521E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 462 TO 468 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	9.987E-10
0.650	20.000	0.000	3.516E-04
0.700	20.000	0.000	3.890E-04
0.750	20.000	0.000	3.756E-04
0.800	20.000	0.000	3.774E-04
1.000	20.000	0.000	3.490E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 468 TO 474 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.959E-10
0.650	20.000	0.000	2.984E-04
0.700	20.000	0.000	3.841E-04
0.750	20.000	0.000	3.811E-04
0.800	20.000	0.000	3.728E-04
1.000	20.000	0.000	3.481E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 474 TO 480 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	3.732E-11
0.650	20.000	0.000	2.280E-04
0.700	20.000	0.000	3.598E-04
0.750	20.000	0.000	3.861E-04
0.800	20.000	0.000	3.725E-04
1.000	20.000	0.000	3.478E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 480 TO 486 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	7.310E-12
0.650	20.000	0.000	1.555E-04
0.700	20.000	0.000	3.129E-04
0.750	20.000	0.000	3.823E-04
0.800	20.000	0.000	3.761E-04
1.000	20.000	0.000	3.474E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 486 TO 492 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	9.477E-05
0.700	20.000	0.000	2.484E-04
0.750	20.000	0.000	3.618E-04
0.800	20.000	0.000	3.797E-04
1.000	20.000	0.000	3.472E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 492 TO 498 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.198E-05
0.700	20.000	0.000	1.786E-04
0.750	20.000	0.000	3.210E-04
0.800	20.000	0.000	3.764E-04
1.000	20.000	0.000	3.471E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 498 TO 504 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	2.595E-05
0.700	20.000	0.000	1.161E-04
0.750	20.000	0.000	2.631E-04
0.800	20.000	0.000	3.592E-04

1.000	20.000	0.000	3.467E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 504 TO 510 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	6.866E-05
0.750	20.000	0.000	1.976E-04
0.800	20.000	0.000	3.241E-04
1.000	20.000	0.000	3.452E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 510 TO 516 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	2.865E-06
0.700	20.000	0.000	2.696E-05
0.750	20.000	0.000	1.237E-04
0.800	20.000	0.000	2.866E-04
1.000	20.000	0.000	3.395E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 516 TO 522 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.085E-06
0.700	20.000	0.000	1.249E-05
0.750	20.000	0.000	7.212E-05
0.800	20.000	0.000	2.133E-04
1.000	20.000	0.000	3.385E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 522 TO 528 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	3.951E-07
0.700	20.000	0.000	5.454E-06
0.750	20.000	0.000	3.884E-05
0.800	20.000	0.000	1.446E-04
1.000	20.000	0.000	3.375E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 528 TO 534 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.392E-07

0.700	20.000	0.000	2.266E-06
0.750	20.000	0.000	1.954E-05
0.800	20.000	0.000	9.007E-05
1.000	20.000	0.000	3.378E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 534 TO 540 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	4.782E-08
0.700	20.000	0.000	9.028E-07
0.750	20.000	0.000	9.267E-06
0.800	20.000	0.000	5.203E-05
1.000	20.000	0.000	3.401E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 540 TO 546 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.609E-08
0.700	20.000	0.000	3.475E-07
0.750	20.000	0.000	4.180E-06
0.800	20.000	0.000	2.814E-05
1.000	20.000	0.000	3.419E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 546 TO 552 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.331E-09
0.700	20.000	0.000	1.300E-07
0.750	20.000	0.000	1.807E-06
0.800	20.000	0.000	1.436E-05
1.000	20.000	0.000	3.373E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 552 TO 558 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.746E-09
0.700	20.000	0.000	4.751E-08
0.750	20.000	0.000	7.532E-07
0.800	20.000	0.000	6.973E-06
1.000	20.000	0.000	3.205E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 558 TO 564 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.676E-10
0.700	20.000	0.000	1.705E-08
0.750	20.000	0.000	3.046E-07
0.800	20.000	0.000	3.243E-06
1.000	20.000	0.000	2.891E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 564 TO 570 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.826E-10
0.700	20.000	0.000	6.029E-09
0.750	20.000	0.000	1.201E-07
0.800	20.000	0.000	1.453E-06
1.000	20.000	0.000	2.456E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 570 TO 576 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.893E-11
0.700	20.000	0.000	2.109E-09
0.750	20.000	0.000	4.639E-08
0.800	20.000	0.000	6.310E-07
1.000	20.000	0.000	1.958E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 576 TO 582 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.901E-11
0.700	20.000	0.000	7.318E-10
0.750	20.000	0.000	1.762E-08
0.800	20.000	0.000	2.667E-07
1.000	20.000	0.000	1.468E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 582 TO 588 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	6.145E-12
0.700	20.000	0.000	2.509E-10
0.750	20.000	0.000	6.598E-09
0.800	20.000	0.000	1.102E-07
1.000	20.000	0.000	1.037E-04

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 588 TO 594 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	8.633E-11
0.750	20.000	0.000	2.446E-09
0.800	20.000	0.000	4.471E-08
1.000	20.000	0.000	6.939E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 594 TO 600 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	2.967E-11
0.750	20.000	0.000	8.994E-10
0.800	20.000	0.000	1.785E-08
1.000	20.000	0.000	4.416E-05

PUFF#	X (M)	Y (M)	Z (M)	TIME (MILLISEC)	TOTAL Q (GRAMS)	SY (M)	SZ (M)	TRAV. D. (KM)	KEYP
1	2067.795	20000.000	35.488	30000	876.15	132.855	56.953	2.068	1
2	1915.431	20000.000	35.488	72000	486.75	124.023	53.502	1.915	1
3	1773.950	20000.000	35.488	111000	778.80	115.759	50.255	1.774	1
4	1643.353	20000.000	35.488	147000	389.40	108.070	47.218	1.643	1
5	1534.522	20000.000	35.488	177000	584.10	101.617	44.657	1.535	1
6	1414.807	20000.000	35.488	210000	486.75	94.465	41.803	1.415	1
7	1316.859	20000.000	35.488	237000	389.40	88.570	39.437	1.317	1
8	1229.794	20000.000	35.488	261000	389.40	83.293	37.309	1.230	1
9	1131.846	20000.000	35.488	288000	486.75	77.313	34.885	1.132	1

600 SEC AVG. CONCENTRATION AT RECEPTORS FOR SIMULATION PERIOD 0 TO 600 SECONDS
DUE TO SOURCE NUMBER 1

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.910E-06
0.400	20.000	0.000	1.047E-04
0.650	20.000	0.000	1.902E-04
0.700	20.000	0.000	1.940E-04
0.750	20.000	0.000	1.938E-04
0.800	20.000	0.000	1.914E-04
1.000	20.000	0.000	1.725E-04

* *

0.17 HR AVG. CONCENTRATION AT RECEPTORS FOR ALL SIMULATION PERIODS
DUE TO SOURCE NUMBER 1

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.910E-06
0.400	20.000	0.000	1.047E-04
0.650	20.000	0.000	1.902E-04
0.700	20.000	0.000	1.940E-04
0.750	20.000	0.000	1.938E-04
0.800	20.000	0.000	1.914E-04
1.000	20.000	0.000	1.725E-04

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-44

INPUFF MODEL RUN

FOR

HCN FROM INORGANIC WASTE TREATMENT SYSTEM STACK UNDER UPSET CONDITIONS

INPUFF 2.3 MULTIPLE SOURCE INTEGRATED PUFF MODEL

Inorganic Waste Treatment System Stack --- HCN Emissions Under Upset Conditions

M O D E L O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

USER SUPPLIED WIND FIELD	F
UNIT 22 OUTPUT OPTION	F
PRINT PUFF INFORMATION	T
INTERMEDIATE CONCENTRATIONS	T

DISPERSION CALCULATED USING PASQUILL-GIFFORD (DISTANCE DEPENDENT) SIGMA CURVES,
WITH TRANSITION TO DRAXLER'S LONG RANGE TRANSPORT SIGMA-Y AT SYMAX = 1000.0 METERS.

B E G I N A N A L Y S I S O F S O U R C E N U M B E R 1

S O U R C E O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

STACK DOWNWASH	F
BUOYANCY INDUCED DISPERSION	F
DEPOSITION AND SETTLING	F
USER PLUME RISE	F
PERFORM PUFF COMBINATIONS	T

I N P U T P A R A M E T E R S

SOURCE UPDATE INTERVAL = 6 SECONDS. (-1 INDICATES NO UPDATE)
START CONCENTRATION CALCULATIONS AT TIME = 0 SECONDS.
ANEMOMETER HEIGHT = 10.0 METERS.

* * * I N F O R M A T I O N F O R S O U R C E N U M B E R 1 * * *

SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	COORD. AT TIME 0 SECONDS EAST (KM)	NORTH (KM)
.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	20.000

SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	PLUME HEIGHT (M)	INITIAL SIGMAS (R) (M)	(Z)	DEPOSITION VELOCITY (CM/SEC)	SETTLING VELOCITY (CM/SEC)
0.000	0.0	35.49	1.5	1.5	0.00	0.00

* * * S O U R C E U P D A T E T A B L E * * *

TIME (SEC)	SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	INITIAL SIGMAS (R) (M)	(Z)
0	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
6	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
12	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
18	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
24	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
30	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
36	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
42	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

48	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
54	.191E+01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
60	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
66	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
72	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
78	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
84	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
90	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
96	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
102	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
108	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
114	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
120	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
126	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
132	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
138	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
144	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
150	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
156	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
162	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
168	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
174	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
180	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
186	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
192	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
198	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
204	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
210	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
216	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
222	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
228	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
234	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
240	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
246	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
252	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
258	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
264	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
270	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
276	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
282	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
288	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
294	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
300	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
306	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
312	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
318	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
324	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
330	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
336	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
342	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
348	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
354	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
360	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
366	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
372	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
378	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
384	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
390	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
396	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
402	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
408	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
414	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
420	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
426	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
432	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
438	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
444	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
450	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
456	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
462	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
468	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
474	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

480	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
486	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
492	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
498	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
504	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
510	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
516	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
522	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
528	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
534	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
540	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
546	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
552	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
558	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
564	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
570	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
576	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
582	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
588	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
594	.000E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

*** M E T E O R O L O G Y ***

WIND DIR. (DEG)	WIND SPD. (M/SEC)	MIXING HGT. (M)	PROF.EP (DIMEN)	STABILITY (CLASS)	U PLUME (M/SEC)	TEMP (K)	SIGMA TH. (RAD.)	SIGMA PH. (RAD.)
270.0	3.000	1500.	0.150	4	3.628	290.0	0.1750	0.1120

SIMULATION PERIOD START (SEC)	STOP (SEC)	SIMULATION TIME (SEC)	PUFF RELEASE RATE (SEC)	SOURCE RECEPTOR DISTANCE (KM)	PUFF COMB. CRITERION (SIGMAS)
0	600	600	6.000	0.20	1.000

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 0 TO 6 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 6 TO 12 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 12 TO 18 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 18 TO 24 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 24 TO 30 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 30 TO 36 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 36 TO 42 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.916E-17
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 42 TO 48 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.020E-11
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 48 TO 54 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.391E-08
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 54 TO 60 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.151E-07
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 60 TO 66 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	5.270E-07
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 66 TO 72 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.561E-07
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01

1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 72 TO 78 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.804E-07
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 78 TO 84 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.833E-07
0.400	20.000	0.000	3.676E-12
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 84 TO 90 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.836E-07
0.400	20.000	0.000	1.345E-09
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 90 TO 96 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.835E-07
0.400	20.000	0.000	2.354E-08
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 96 TO 102 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.836E-07
0.400	20.000	0.000	5.500E-07
0.650	20.000	0.000	0.000E-01

0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 102 TO 108 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.836E-07
0.400	20.000	0.000	3.781E-06
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 108 TO 114 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.697E-07
0.400	20.000	0.000	1.092E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 114 TO 120 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	4.686E-07
0.400	20.000	0.000	1.792E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 120 TO 126 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.565E-07
0.400	20.000	0.000	2.116E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 126 TO 132 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	2.750E-08
0.400	20.000	0.000	2.323E-05
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 132 TO 138 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	3.174E-09
0.400	20.000	0.000	2.428E-05
0.650	20.000	0.000	2.462E-11
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 138 TO 144 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.865E-10
0.400	20.000	0.000	2.490E-05
0.650	20.000	0.000	1.157E-09
0.700	20.000	0.000	1.144E-12
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 144 TO 150 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.277E-11
0.400	20.000	0.000	2.502E-05
0.650	20.000	0.000	2.281E-08
0.700	20.000	0.000	7.976E-11
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 150 TO 156 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.592E-12
0.400	20.000	0.000	2.467E-05
0.650	20.000	0.000	1.147E-07
0.700	20.000	0.000	7.118E-10
0.750	20.000	0.000	8.360E-13
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 156 TO 162 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.200E-13
0.400	20.000	0.000	2.404E-05
0.650	20.000	0.000	8.148E-07
0.700	20.000	0.000	1.414E-08
0.750	20.000	0.000	5.223E-11
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 162 TO 168 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.019E-05
0.650	20.000	0.000	3.414E-06
0.700	20.000	0.000	1.453E-07
0.750	20.000	0.000	1.467E-09
0.800	20.000	0.000	3.495E-12
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 168 TO 174 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.354E-05
0.650	20.000	0.000	9.324E-06
0.700	20.000	0.000	8.633E-07
0.750	20.000	0.000	2.110E-08
0.800	20.000	0.000	1.339E-10
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 174 TO 180 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	7.079E-06
0.650	20.000	0.000	1.815E-05
0.700	20.000	0.000	3.258E-06
0.750	20.000	0.000	1.732E-07
0.800	20.000	0.000	2.618E-09
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 180 TO 186 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.927E-06
0.650	20.000	0.000	2.741E-05
0.700	20.000	0.000	8.477E-06
0.750	20.000	0.000	8.880E-07
0.800	20.000	0.000	2.895E-08
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 186 TO 192 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	9.910E-07
0.650	20.000	0.000	3.466E-05
0.700	20.000	0.000	1.637E-05
0.750	20.000	0.000	3.068E-06
0.800	20.000	0.000	1.974E-07
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 192 TO 198 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.858E-07
0.650	20.000	0.000	3.924E-05
0.700	20.000	0.000	2.514E-05
0.750	20.000	0.000	7.650E-06
0.800	20.000	0.000	8.937E-07
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 198 TO 204 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	7.281E-08
0.650	20.000	0.000	4.181E-05
0.700	20.000	0.000	3.268E-05
0.750	20.000	0.000	1.464E-05
0.800	20.000	0.000	2.864E-06
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 204 TO 210 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.689E-08
0.650	20.000	0.000	4.325E-05
0.700	20.000	0.000	3.799E-05
0.750	20.000	0.000	2.274E-05
0.800	20.000	0.000	6.874E-06
1.000	20.000	0.000	7.177E-12

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 210 TO 216 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	3.662E-09
0.650	20.000	0.000	4.393E-05
0.700	20.000	0.000	4.129E-05
0.750	20.000	0.000	3.024E-05
0.800	20.000	0.000	1.302E-05

1.000	20.000	0.000	1.256E-10

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 216 TO 222 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	7.572E-10
0.650	20.000	0.000	4.338E-05
0.700	20.000	0.000	4.321E-05
0.750	20.000	0.000	3.601E-05
0.800	20.000	0.000	2.040E-05
1.000	20.000	0.000	1.422E-09

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 222 TO 228 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.519E-10
0.650	20.000	0.000	4.054E-05
0.700	20.000	0.000	4.414E-05
0.750	20.000	0.000	3.991E-05
0.800	20.000	0.000	2.762E-05
1.000	20.000	0.000	1.099E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 228 TO 234 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	2.975E-11
0.650	20.000	0.000	3.479E-05
0.700	20.000	0.000	4.379E-05
0.750	20.000	0.000	4.232E-05
0.800	20.000	0.000	3.359E-05
1.000	20.000	0.000	6.086E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 234 TO 240 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	5.819E-12
0.650	20.000	0.000	2.686E-05
0.700	20.000	0.000	4.138E-05
0.750	20.000	0.000	4.357E-05
0.800	20.000	0.000	3.794E-05
1.000	20.000	0.000	2.519E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 240 TO 246 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	9.693E-13
0.650	20.000	0.000	1.711E-05

0.700	20.000	0.000	3.632E-05
0.750	20.000	0.000	4.458E-05
0.800	20.000	0.000	4.238E-05
1.000	20.000	0.000	4.152E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 246 TO 252 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	1.906E-13
0.650	20.000	0.000	1.030E-05
0.700	20.000	0.000	2.825E-05
0.750	20.000	0.000	4.238E-05
0.800	20.000	0.000	4.356E-05
1.000	20.000	0.000	1.318E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 252 TO 258 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.630E-06
0.700	20.000	0.000	1.990E-05
0.750	20.000	0.000	3.733E-05
0.800	20.000	0.000	4.370E-05
1.000	20.000	0.000	3.333E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 258 TO 264 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	2.819E-06
0.700	20.000	0.000	1.276E-05
0.750	20.000	0.000	3.013E-05
0.800	20.000	0.000	4.192E-05
1.000	20.000	0.000	6.900E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 264 TO 270 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.305E-06
0.700	20.000	0.000	7.486E-06
0.750	20.000	0.000	2.224E-05
0.800	20.000	0.000	3.768E-05
1.000	20.000	0.000	1.201E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 270 TO 276 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.640E-07
0.700	20.000	0.000	4.048E-06
0.750	20.000	0.000	1.506E-05
0.800	20.000	0.000	3.137E-05
1.000	20.000	0.000	1.805E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 276 TO 282 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	2.297E-07
0.700	20.000	0.000	2.034E-06
0.750	20.000	0.000	9.389E-06
0.800	20.000	0.000	2.409E-05
1.000	20.000	0.000	2.406E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 282 TO 288 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	8.899E-08
0.700	20.000	0.000	9.570E-07
0.750	20.000	0.000	5.427E-06
0.800	20.000	0.000	1.709E-05
1.000	20.000	0.000	2.921E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 288 TO 294 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	3.304E-08
0.700	20.000	0.000	4.252E-07
0.750	20.000	0.000	2.927E-06
0.800	20.000	0.000	1.124E-05
1.000	20.000	0.000	3.312E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 294 TO 300 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.185E-08
0.700	20.000	0.000	1.797E-07
0.750	20.000	0.000	1.483E-06
0.800	20.000	0.000	6.885E-06
1.000	20.000	0.000	3.574E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 300 TO 306 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	4.127E-09
0.700	20.000	0.000	7.282E-08
0.750	20.000	0.000	7.113E-07
0.800	20.000	0.000	3.951E-06
1.000	20.000	0.000	3.703E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 306 TO 312 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.405E-09
0.700	20.000	0.000	2.845E-08
0.750	20.000	0.000	3.249E-07
0.800	20.000	0.000	2.137E-06
1.000	20.000	0.000	3.685E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 312 TO 318 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	4.700E-10
0.700	20.000	0.000	1.079E-08
0.750	20.000	0.000	1.422E-07
0.800	20.000	0.000	1.096E-06
1.000	20.000	0.000	3.507E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 318 TO 324 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.548E-10
0.700	20.000	0.000	3.988E-09
0.750	20.000	0.000	6.003E-08
0.800	20.000	0.000	5.362E-07
1.000	20.000	0.000	3.173E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 324 TO 330 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.058E-11
0.700	20.000	0.000	1.445E-09
0.750	20.000	0.000	2.456E-08
0.800	20.000	0.000	2.516E-07
1.000	20.000	0.000	2.719E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 330 TO 336 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.641E-11
0.700	20.000	0.000	5.150E-10
0.750	20.000	0.000	9.785E-09
0.800	20.000	0.000	1.138E-07
1.000	20.000	0.000	2.203E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 336 TO 342 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	5.307E-12
0.700	20.000	0.000	1.813E-10
0.750	20.000	0.000	3.814E-09
0.800	20.000	0.000	4.987E-08
1.000	20.000	0.000	1.688E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 342 TO 348 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.713E-12
0.700	20.000	0.000	6.306E-11
0.750	20.000	0.000	1.459E-09
0.800	20.000	0.000	2.127E-08
1.000	20.000	0.000	1.225E-05

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 348 TO 354 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	4.467E-13
0.700	20.000	0.000	2.184E-11
0.750	20.000	0.000	5.503E-10
0.800	20.000	0.000	8.859E-09
1.000	20.000	0.000	8.450E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 354 TO 360 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	1.444E-13
0.700	20.000	0.000	7.530E-12
0.750	20.000	0.000	2.051E-10
0.800	20.000	0.000	3.619E-09

1.000	20.000	0.000	5.553E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 360 TO 366 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	2.591E-12
0.750	20.000	0.000	7.548E-11
0.800	20.000	0.000	1.454E-09
1.000	20.000	0.000	3.490E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 366 TO 372 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	6.970E-13
0.750	20.000	0.000	2.769E-11
0.800	20.000	0.000	5.763E-10
1.000	20.000	0.000	2.105E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 372 TO 378 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	2.397E-13
0.750	20.000	0.000	1.011E-11
0.800	20.000	0.000	2.260E-10
1.000	20.000	0.000	1.222E-06

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 378 TO 384 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	8.258E-14
0.750	20.000	0.000	3.682E-12
0.800	20.000	0.000	8.783E-11
1.000	20.000	0.000	6.861E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 384 TO 390 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01

0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	1.339E-12
0.800	20.000	0.000	3.377E-11
1.000	20.000	0.000	3.734E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 390 TO 396 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	3.690E-13
0.800	20.000	0.000	1.298E-11
1.000	20.000	0.000	1.976E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 396 TO 402 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	1.342E-13
0.800	20.000	0.000	4.972E-12
1.000	20.000	0.000	1.020E-07

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 402 TO 408 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	1.902E-12
1.000	20.000	0.000	5.152E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 408 TO 414 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	7.270E-13
1.000	20.000	0.000	2.550E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 414 TO 420 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	2.040E-13
1.000	20.000	0.000	1.241E-08

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 420 TO 426 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	7.804E-14
1.000	20.000	0.000	5.945E-09

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 426 TO 432 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	2.811E-09

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 432 TO 438 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	1.314E-09

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 438 TO 444 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	6.080E-10

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 444 TO 450 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	2.790E-10

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 450 TO 456 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	1.271E-10

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 456 TO 462 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	5.759E-11

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 462 TO 468 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	2.597E-11

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 468 TO 474 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	1.153E-11

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 474 TO 480 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	5.166E-12

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 480 TO 486 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	1.507E-12

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 486 TO 492 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	6.734E-13

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 492 TO 498 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	3.006E-13

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 498 TO 504 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01

1.000	20.000	0.000	1.342E-13

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 504 TO 510 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	5.989E-14

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 510 TO 516 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 516 TO 522 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 522 TO 528 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 528 TO 534 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01

0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 534 TO 540 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 540 TO 546 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 546 TO 552 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 552 TO 558 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 558 TO 564 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 564 TO 570 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 570 TO 576 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 576 TO 582 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 582 TO 588 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 588 TO 594 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

6 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 594 TO 600 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.750	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

PUFF#	X (M)	Y (M)	Z (M)	TIME (MILLISEC)	TOTAL Q (GRAMS)	SY (M)	SZ (M)	TRAV. D. (KM)	KEYP
1	2056.911	20000.000	35.488	32999	114.36	132.226	56.708	2.057	1

600 SEC AVG. CONCENTRATION AT RECEPTORS FOR SIMULATION PERIOD 0 TO 600 SECONDS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.836E-08
0.400	20.000	0.000	2.456E-06
0.650	20.000	0.000	4.458E-06
0.700	20.000	0.000	4.512E-06
0.750	20.000	0.000	4.534E-06
0.800	20.000	0.000	4.515E-06
1.000	20.000	0.000	4.058E-06

****

0.17 HR AVG. CONCENTRATION AT RECEPTORS FOR ALL SIMULATION PERIODS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	6.836E-08
0.400	20.000	0.000	2.456E-06
0.650	20.000	0.000	4.458E-06
0.700	20.000	0.000	4.512E-06
0.750	20.000	0.000	4.534E-06
0.800	20.000	0.000	4.515E-06
1.000	20.000	0.000	4.058E-06

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-45

INPUFF MODEL RUN

FOR

HF FROM INORGANIC WASTE TREATMENT SYSTEM STACK UNDER UPSET CONDITIONS

INPUFF 2.3 MULTIPLE SOURCE INTEGRATED PUFF MODEL

Inorganic Waste Treatment System Stack --- HF Emissions Under Upset Conditions

M O D E L   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

USER SUPPLIED WIND FIELD	F
UNIT 22 OUTPUT OPTION	F
PRINT PUFF INFORMATION	T
INTERMEDIATE CONCENTRATIONS	T

DISPERSION CALCULATED USING PASQUILL-GIFFORD (DISTANCE DEPENDENT) SIGMA CURVES,
WITH TRANSITION TO DRAXLER'S LONG RANGE TRANSPORT SIGMA-Y AT SYMAX = 1000.0 METERS.

B E G I N   A N A L Y S I S   O F   S O U R C E   N U M B E R   1

S O U R C E   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

STACK DOWNWASH	F
BUOYANCY INDUCED DISPERSION	F
DEPOSITION AND SETTLING	F
USER PLUME RISE	F
PERFORM PUFF COMBINATIONS	T

I N P U T   P A R A M E T E R S

SOURCE UPDATE INTERVAL = 10 SECONDS. (-1 INDICATES NO UPDATE)
START CONCENTRATION CALCULATIONS AT TIME = 0 SECONDS.
ANEMOMETER HEIGHT = 10.0 METERS.

* * *   I N F O R M A T I O N   F O R   S O U R C E   N U M B E R   1   * * *

SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	COORD. AT TIME 0 SECONDS EAST (KM)	NORTH (KM)
.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	20.000

SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	PLUME HEIGHT (M)	INITIAL SIGMAS (R) (M)	(Z)	DEPOSITION VELOCITY (CM/SEC)	SETTLING VELOCITY (CM/SEC)
0.000	0.0	35.49	1.5	1.5	0.00	0.00

* * *   S O U R C E   U P D A T E   T A B L E   * * *

TIME (SEC)	SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	INITIAL SIGMAS (R) (M)	(Z)
0	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
10	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
20	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
30	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
40	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
50	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
60	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
70	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

80	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
90	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
100	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
110	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
120	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
130	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
140	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
150	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
160	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
170	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
180	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
190	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
200	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
210	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
220	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
230	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
240	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
250	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
260	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
270	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
280	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
290	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
300	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
310	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
320	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
330	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
340	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
350	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
360	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
370	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
380	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
390	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
400	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
410	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
420	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
430	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
440	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
450	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
460	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
470	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
480	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
490	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
500	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
510	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
520	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
530	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
540	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
550	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
560	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
570	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
580	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
590	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
600	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
610	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
620	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
630	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
640	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
650	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
660	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
670	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
680	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
690	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
700	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
710	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
720	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
730	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
740	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
750	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
760	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
770	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
780	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
790	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

800	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
810	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
820	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
830	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
840	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
850	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
860	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
870	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
880	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
890	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
900	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
910	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
920	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
930	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
940	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
950	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
960	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
970	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
980	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
990	.230E-01	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

*** M E T E O R O L O G Y ***

WIND DIR. (DEG)	WIND SPD. (M/SEC)	MIXING HGT. (M)	PROF.EP (DIMEN)	STABILITY (CLASS)	U PLUME (M/SEC)	TEMP (K)	SIGMA TH. (RAD.)	SIGMA PH. (RAD.)
270.0	3.000	1500.	0.150	4	3.628	290.0	0.1750	0.1120

SIMULATION PERIOD START (SEC)	STOP (SEC)	SIMULATION TIME (SEC)	PUFF RELEASE RATE (SEC)	SOURCE RECEPTOR DISTANCE (KM)	PUFF COMB. CRITERION (SIGMAS)
0	1000	1000	10.000	0.20	1.000

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 0 TO 10 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 10 TO 20 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 20 TO 30 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 30 TO 40 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 40 TO 50 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.229E-14
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 50 TO 60 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	9.456E-10
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 60 TO 70 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	7.220E-09
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 70 TO 80 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.130E-09
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 80 TO 90 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	6.859E-13
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 90 TO 100 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	1.367E-09
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 100 TO 110 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	4.799E-08
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 110 TO 120 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	1.838E-07
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01

1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 120 TO 130 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.704E-07
0.600	20.000	0.000	5.898E-13
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 130 TO 140 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.918E-07
0.600	20.000	0.000	2.304E-10
0.650	20.000	0.000	5.034E-13
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 140 TO 150 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.947E-07
0.600	20.000	0.000	9.079E-09
0.650	20.000	0.000	1.471E-10
0.700	20.000	0.000	4.221E-13
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 150 TO 160 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	7.579E-08
0.650	20.000	0.000	5.602E-09
0.700	20.000	0.000	9.522E-11
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 160 TO 170 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	2.329E-07

0.650	20.000	0.000	5.149E-08
0.700	20.000	0.000	3.465E-09
0.800	20.000	0.000	2.887E-13
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 170 TO 180 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	3.930E-07
0.650	20.000	0.000	1.818E-07
0.700	20.000	0.000	3.420E-08
0.800	20.000	0.000	4.175E-11
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 180 TO 190 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	4.819E-07
0.650	20.000	0.000	3.483E-07
0.700	20.000	0.000	1.359E-07
0.800	20.000	0.000	1.362E-09
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 190 TO 200 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.138E-07
0.650	20.000	0.000	4.659E-07
0.700	20.000	0.000	2.930E-07
0.800	20.000	0.000	1.466E-08
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 200 TO 210 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.286E-07
0.650	20.000	0.000	5.243E-07
0.700	20.000	0.000	4.379E-07
0.800	20.000	0.000	6.023E-08
1.000	20.000	0.000	1.915E-14

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 210 TO 220 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.415E-07
0.650	20.000	0.000	5.408E-07
0.700	20.000	0.000	5.129E-07
0.800	20.000	0.000	1.812E-07
1.000	20.000	0.000	2.597E-12

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 220 TO 230 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.224E-07
0.650	20.000	0.000	5.569E-07
0.700	20.000	0.000	5.413E-07
0.800	20.000	0.000	3.292E-07
1.000	20.000	0.000	1.072E-10

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 230 TO 240 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.477E-07
0.700	20.000	0.000	5.593E-07
0.800	20.000	0.000	4.433E-07
1.000	20.000	0.000	1.707E-09

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 240 TO 250 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.337E-07
0.700	20.000	0.000	5.592E-07
0.800	20.000	0.000	5.061E-07
1.000	20.000	0.000	1.267E-08

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 250 TO 260 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.348E-07
0.650	20.000	0.000	5.436E-07
0.700	20.000	0.000	5.363E-07
0.800	20.000	0.000	5.360E-07
1.000	20.000	0.000	5.129E-08

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 260 TO 270 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.500E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.450E-07
1.000	20.000	0.000	1.305E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 270 TO 280 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.607E-07
0.700	20.000	0.000	5.552E-07
0.800	20.000	0.000	5.374E-07
1.000	20.000	0.000	2.360E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 280 TO 290 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.653E-07
0.800	20.000	0.000	5.360E-07
1.000	20.000	0.000	3.367E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 290 TO 300 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.430E-07
1.000	20.000	0.000	4.109E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 300 TO 310 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.452E-07
0.700	20.000	0.000	5.505E-07
0.800	20.000	0.000	5.329E-07
1.000	20.000	0.000	4.459E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 310 TO 320 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.518E-07
0.800	20.000	0.000	5.375E-07
1.000	20.000	0.000	4.832E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 320 TO 330 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.618E-07
0.800	20.000	0.000	5.417E-07
1.000	20.000	0.000	5.029E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 330 TO 340 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.441E-07
1.000	20.000	0.000	5.012E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 340 TO 350 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.462E-07
0.800	20.000	0.000	5.493E-07
1.000	20.000	0.000	4.909E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 350 TO 360 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.500E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.486E-07

1.000	20.000	0.000	4.794E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 360 TO 370 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.607E-07
0.700	20.000	0.000	5.552E-07
0.800	20.000	0.000	5.384E-07
1.000	20.000	0.000	4.814E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 370 TO 380 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.653E-07
0.800	20.000	0.000	5.362E-07
1.000	20.000	0.000	4.847E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 380 TO 390 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.431E-07
1.000	20.000	0.000	4.879E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 390 TO 400 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.339E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.518E-07
1.000	20.000	0.000	4.908E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 400 TO 410 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07

0.650	20.000	0.000	5.497E-07
0.700	20.000	0.000	5.438E-07
0.800	20.000	0.000	5.396E-07
1.000	20.000	0.000	4.619E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 410 TO 420 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.606E-07
0.700	20.000	0.000	5.544E-07
0.800	20.000	0.000	5.268E-07
1.000	20.000	0.000	4.721E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 420 TO 430 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.651E-07
0.800	20.000	0.000	5.294E-07
1.000	20.000	0.000	4.932E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 430 TO 440 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.402E-07
1.000	20.000	0.000	5.072E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 440 TO 450 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.339E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.509E-07
1.000	20.000	0.000	5.047E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 450 TO 460 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.301E-07
0.650	20.000	0.000	5.435E-07
0.700	20.000	0.000	5.497E-07
0.800	20.000	0.000	5.372E-07
1.000	20.000	0.000	4.998E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 460 TO 470 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.415E-07
1.000	20.000	0.000	5.033E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 470 TO 480 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.433E-07
1.000	20.000	0.000	4.972E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 480 TO 490 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.442E-07
1.000	20.000	0.000	4.874E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 490 TO 500 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.450E-07
1.000	20.000	0.000	4.823E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 500 TO 510 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.444E-07
1.000	20.000	0.000	4.826E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 510 TO 520 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.443E-07
1.000	20.000	0.000	4.850E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 520 TO 530 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.445E-07
1.000	20.000	0.000	4.872E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 530 TO 540 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.451E-07
1.000	20.000	0.000	4.884E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 540 TO 550 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.462E-07
0.800	20.000	0.000	5.496E-07
1.000	20.000	0.000	4.890E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 550 TO 560 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.301E-07
0.650	20.000	0.000	5.435E-07
0.700	20.000	0.000	5.499E-07
0.800	20.000	0.000	5.443E-07
1.000	20.000	0.000	4.893E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 560 TO 570 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.445E-07
1.000	20.000	0.000	4.894E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 570 TO 580 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.443E-07
1.000	20.000	0.000	4.894E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 580 TO 590 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.445E-07
1.000	20.000	0.000	4.894E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 590 TO 600 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.451E-07

1.000	20.000	0.000	4.894E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 600 TO 610 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.444E-07
1.000	20.000	0.000	4.845E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 610 TO 620 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.443E-07
1.000	20.000	0.000	4.874E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 620 TO 630 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.445E-07
1.000	20.000	0.000	4.887E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 630 TO 640 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.451E-07
1.000	20.000	0.000	4.892E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 640 TO 650 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07

0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.462E-07
0.800	20.000	0.000	5.496E-07
1.000	20.000	0.000	4.893E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 650 TO 660 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.500E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.487E-07
1.000	20.000	0.000	4.795E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 660 TO 670 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.607E-07
0.700	20.000	0.000	5.552E-07
0.800	20.000	0.000	5.384E-07
1.000	20.000	0.000	4.846E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 670 TO 680 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.653E-07
0.800	20.000	0.000	5.362E-07
1.000	20.000	0.000	4.875E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 680 TO 690 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.431E-07
1.000	20.000	0.000	4.896E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 690 TO 700 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.339E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.518E-07
1.000	20.000	0.000	4.916E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 700 TO 710 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.301E-07
0.650	20.000	0.000	5.435E-07
0.700	20.000	0.000	5.497E-07
0.800	20.000	0.000	5.375E-07
1.000	20.000	0.000	4.930E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 710 TO 720 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.416E-07
1.000	20.000	0.000	5.063E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 720 TO 730 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.433E-07
1.000	20.000	0.000	5.023E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 730 TO 740 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.442E-07
1.000	20.000	0.000	4.912E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 740 TO 750 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.450E-07
1.000	20.000	0.000	4.844E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 750 TO 760 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.348E-07
0.650	20.000	0.000	5.436E-07
0.700	20.000	0.000	5.364E-07
0.800	20.000	0.000	5.488E-07
1.000	20.000	0.000	4.835E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 760 TO 770 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.500E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.487E-07
1.000	20.000	0.000	4.854E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 770 TO 780 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.607E-07
0.700	20.000	0.000	5.552E-07
0.800	20.000	0.000	5.384E-07
1.000	20.000	0.000	4.873E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 780 TO 790 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.653E-07
0.800	20.000	0.000	5.362E-07
1.000	20.000	0.000	4.886E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 790 TO 800 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.431E-07
1.000	20.000	0.000	4.900E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 800 TO 810 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.452E-07
0.700	20.000	0.000	5.505E-07
0.800	20.000	0.000	5.329E-07
1.000	20.000	0.000	4.721E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 810 TO 820 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.518E-07
0.800	20.000	0.000	5.375E-07
1.000	20.000	0.000	4.931E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 820 TO 830 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.618E-07
0.800	20.000	0.000	5.417E-07
1.000	20.000	0.000	5.063E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 830 TO 840 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.441E-07

1.000	20.000	0.000	5.023E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 840 TO 850 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.462E-07
0.800	20.000	0.000	5.493E-07
1.000	20.000	0.000	4.912E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 850 TO 860 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.500E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.486E-07
1.000	20.000	0.000	4.795E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 860 TO 870 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.607E-07
0.700	20.000	0.000	5.552E-07
0.800	20.000	0.000	5.384E-07
1.000	20.000	0.000	4.815E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 870 TO 880 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.653E-07
0.800	20.000	0.000	5.362E-07
1.000	20.000	0.000	4.847E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 880 TO 890 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07

0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.431E-07
1.000	20.000	0.000	4.879E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 890 TO 900 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.339E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.518E-07
1.000	20.000	0.000	4.908E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 900 TO 910 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.436E-07
0.650	20.000	0.000	5.497E-07
0.700	20.000	0.000	5.438E-07
0.800	20.000	0.000	5.396E-07
1.000	20.000	0.000	4.619E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 910 TO 920 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.229E-07
0.650	20.000	0.000	5.606E-07
0.700	20.000	0.000	5.544E-07
0.800	20.000	0.000	5.268E-07
1.000	20.000	0.000	4.721E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 920 TO 930 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.125E-07
0.650	20.000	0.000	5.488E-07
0.700	20.000	0.000	5.651E-07
0.800	20.000	0.000	5.294E-07
1.000	20.000	0.000	4.932E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 930 TO 940 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.340E-07
0.700	20.000	0.000	5.613E-07
0.800	20.000	0.000	5.402E-07
1.000	20.000	0.000	5.072E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 940 TO 950 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.217E-07
0.650	20.000	0.000	5.339E-07
0.700	20.000	0.000	5.467E-07
0.800	20.000	0.000	5.509E-07
1.000	20.000	0.000	5.047E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 950 TO 960 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.949E-07
0.600	20.000	0.000	5.301E-07
0.650	20.000	0.000	5.435E-07
0.700	20.000	0.000	5.497E-07
0.800	20.000	0.000	5.372E-07
1.000	20.000	0.000	4.998E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 960 TO 970 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.418E-07
0.650	20.000	0.000	5.453E-07
0.700	20.000	0.000	5.513E-07
0.800	20.000	0.000	5.415E-07
1.000	20.000	0.000	5.033E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 970 TO 980 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.225E-07
0.650	20.000	0.000	5.578E-07
0.700	20.000	0.000	5.520E-07
0.800	20.000	0.000	5.433E-07
1.000	20.000	0.000	4.972E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 980 TO 990 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.124E-07
0.650	20.000	0.000	5.479E-07
0.700	20.000	0.000	5.619E-07
0.800	20.000	0.000	5.442E-07
1.000	20.000	0.000	4.874E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 990 TO 1000 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	8.157E-09
0.400	20.000	0.000	2.950E-07
0.600	20.000	0.000	5.170E-07
0.650	20.000	0.000	5.338E-07
0.700	20.000	0.000	5.597E-07
0.800	20.000	0.000	5.450E-07
1.000	20.000	0.000	4.823E-07

PUFF#	X (M)	Y (M)	Z (M)	TIME (MILLISEC)	TOTAL Q (GRAMS)	SY (M)	SZ (M)	TRAV. D. (KM)	KEYP
1	3482.602	20000.000	35.488	40000	1.61	212.173	87.299	3.483	1
2	3246.801	20000.000	35.488	105000	1.38	199.237	82.416	3.247	1
3	2992.861	20000.000	35.488	175000	1.84	185.193	77.089	2.993	1
4	2775.198	20000.000	35.488	235000	0.92	173.054	72.460	2.775	1
5	2630.090	20000.000	35.488	275000	0.92	164.905	69.341	2.630	1
6	2448.705	20000.000	35.488	325000	1.38	154.652	65.399	2.449	1
7	2267.319	20000.000	35.488	375000	0.92	144.320	61.407	2.267	1
8	2122.211	20000.000	35.488	415000	0.92	135.993	58.175	2.122	1
9	1995.241	20000.000	35.488	450000	0.69	128.658	55.315	1.995	1
10	1868.271	20000.000	35.488	485000	0.92	121.276	52.424	1.868	1
11	1723.163	20000.000	35.488	525000	0.92	112.776	49.079	1.723	1
12	1596.193	20000.000	35.488	560000	0.69	105.279	46.112	1.596	1
13	1469.223	20000.000	35.488	595000	0.92	97.723	43.105	1.469	1
14	1360.392	20000.000	35.488	625000	0.46	91.195	40.492	1.360	1
15	1287.837	20000.000	35.488	645000	0.46	86.815	38.731	1.288	1
16	1197.145	20000.000	35.488	670000	0.69	81.305	36.505	1.197	1
17	1088.313	20000.000	35.488	700000	0.69	74.640	33.796	1.088	1
18	997.621	20000.000	35.488	725000	0.46	69.037	31.503	0.998	1
19	925.066	20000.000	35.488	745000	0.46	64.520	29.644	0.925	1
20	852.512	20000.000	35.488	765000	0.46	59.969	27.760	0.853	1
21	779.958	20000.000	35.488	785000	0.46	55.382	25.849	0.780	1
22	707.404	20000.000	35.488	805000	0.46	50.756	23.908	0.707	1
23	634.850	20000.000	35.488	825000	0.46	46.084	21.932	0.635	1
24	562.295	20000.000	35.488	845000	0.46	41.365	19.919	0.562	1
25	507.880	20000.000	35.488	860000	0.23	37.793	18.383	0.508	1
26	471.603	20000.000	35.488	870000	0.23	35.391	17.343	0.472	1
27	435.325	20000.000	35.488	880000	0.23	32.974	16.290	0.435	1
28	399.048	20000.000	35.488	890000	0.23	30.538	15.222	0.399	1
29	362.771	20000.000	35.488	900000	0.23	28.084	14.139	0.363	1
30	326.494	20000.000	35.488	910000	0.23	25.609	13.038	0.326	1
31	290.217	20000.000	35.488	920000	0.23	23.112	11.917	0.290	1
32	253.940	20000.000	35.488	930000	0.23	20.588	10.773	0.254	1
33	217.663	20000.000	35.488	940000	0.23	18.035	9.604	0.218	1
34	181.386	20000.000	35.488	950000	0.23	15.448	8.404	0.181	1
35	145.108	20000.000	35.488	960000	0.23	12.821	7.167	0.145	1
36	108.831	20000.000	35.488	970000	0.23	10.145	5.883	0.109	1
37	72.554	20000.000	35.488	980000	0.23	7.404	4.537	0.073	1
38	36.277	20000.000	35.488	990000	0.23	4.573	3.101	0.036	1
39	0.000	20000.000	35.488	1000000	0.23	1.500	1.500	0.000	1

1000 SEC AVG. CONCENTRATION AT RECEPTORS FOR SIMULATION PERIOD 0 TO 1000 SECONDS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	7.667E-09
0.400	20.000	0.000	2.617E-07
0.600	20.000	0.000	4.364E-07
0.650	20.000	0.000	4.465E-07
0.700	20.000	0.000	4.466E-07
0.800	20.000	0.000	4.220E-07
1.000	20.000	0.000	3.540E-07

* *

0.28 HR AVG. CONCENTRATION AT RECEPTORS FOR ALL SIMULATION PERIODS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	7.667E-09
0.400	20.000	0.000	2.617E-07
0.600	20.000	0.000	4.364E-07
0.650	20.000	0.000	4.465E-07
0.700	20.000	0.000	4.466E-07
0.800	20.000	0.000	4.220E-07
1.000	20.000	0.000	3.540E-07

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-46

INPUFF MODEL RUN

FOR

HCl FROM INORGANIC WASTE TREATMENT SYSTEM STACK UNDER UPSET CONDITIONS

INPUFF 2.3 MULTIPLE SOURCE INTEGRATED PUFF MODEL

Inorganic Waste Treatment System Stack --- HCl Emissions Under Upset Conditions

M O D E L   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

USER SUPPLIED WIND FIELD	F
UNIT 22 OUTPUT OPTION	F
PRINT PUFF INFORMATION	T
INTERMEDIATE CONCENTRATIONS	T

DISPERSION CALCULATED USING PASQUILL-GIFFORD (DISTANCE DEPENDENT) SIGMA CURVES,
WITH TRANSITION TO DRAXLER'S LONG RANGE TRANSPORT SIGMA-Y AT SYMAX = 1000.0 METERS.

B E G I N   A N A L Y S I S   O F   S O U R C E   N U M B E R   1

S O U R C E   O P T I O N S   A "T" INDICATES THAT
THE OPTION HAS BEEN EXERCISED

STACK DOWNWASH	F
BUOYANCY INDUCED DISPERSION	F
DEPOSITION AND SETTLING	F
USER PLUME RISE	F
PERFORM PUFF COMBINATIONS	T

I N P U T   P A R A M E T E R S

SOURCE UPDATE INTERVAL = 10 SECONDS. (-1 INDICATES NO UPDATE)
START CONCENTRATION CALCULATIONS AT TIME = 0 SECONDS.
ANEMOMETER HEIGHT = 10.0 METERS.

* * *   I N F O R M A T I O N   F O R   S O U R C E   N U M B E R   1   * * *

SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	COORD. AT TIME 0 SECONDS EAST (KM)	NORTH (KM)
.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	20.000

SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	PLUME HEIGHT (M)	INITIAL SIGMAS (R) (M)	(Z)	DEPOSITION VELOCITY (CM/SEC)	SETTLING VELOCITY (CM/SEC)
0.000	0.0	35.49	1.5	1.5	0.00	0.00

* * *   S O U R C E   U P D A T E   T A B L E   * * *

TIME (SEC)	SOURCE STRENGTH (G/SEC)	STACK HEIGHT (M)	STACK TEMP. (DEG-K)	STACK GAS VELOCITY (M/SEC)	STACK DIAMETER (M)	VOLUME FLOW (M**3/SEC)	SOURCE SPEED (M/SEC)	SOURCE DIRECTION (DEG)	INITIAL SIGMAS (R) (M)	(Z)
0	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
10	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
20	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
30	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
40	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
50	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
60	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
70	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

80	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
90	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
100	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
110	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
120	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
130	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
140	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
150	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
160	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
170	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
180	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
190	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
200	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
210	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
220	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
230	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
240	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
250	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
260	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
270	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
280	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
290	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
300	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
310	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
320	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
330	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
340	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
350	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
360	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
370	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
380	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
390	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
400	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
410	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
420	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
430	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
440	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
450	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
460	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
470	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
480	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
490	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
500	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
510	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
520	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
530	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
540	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
550	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
560	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
570	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
580	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
590	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
600	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
610	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
620	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
630	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
640	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
650	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
660	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
670	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
680	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
690	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
700	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
710	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
720	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
730	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
740	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
750	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
760	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
770	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
780	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
790	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

800	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
810	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
820	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
830	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
840	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
850	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
860	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
870	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
880	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
890	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
900	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
910	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
920	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
930	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
940	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
950	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
960	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
970	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
980	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5
990	.514E+00	30.49	293.300	9.684	0.610	2.830	0.000	0.0	1.5	1.5

*** M E T E O R O L O G Y ***

WIND DIR. (DEG)	WIND SPD. (M/SEC)	MIXING HGT. (M)	PROF.EP (DIMEN)	STABILITY (CLASS)	U PLUME (M/SEC)	TEMP (K)	SIGMA TH. (RAD.)	SIGMA PH. (RAD.)
270.0	3.000	1500.	0.150	4	3.628	290.0	0.1750	0.1120

SIMULATION PERIOD START (SEC)	SIMULATION PERIOD STOP (SEC)	SIMULATION TIME (SEC)	PUFF RELEASE RATE (SEC)	SOURCE RECEPTOR DISTANCE (KM)	PUFF COMB. CRITERION (SIGMAS)
0	1000	1000	10.000	0.20	1.000

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 0 TO 10 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 10 TO 20 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 20 TO 30 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 30 TO 40 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	0.000E-01
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 40 TO 50 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.746E-13
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 50 TO 60 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	2.113E-08
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 60 TO 70 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.613E-07
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 70 TO 80 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.817E-07
0.400	20.000	0.000	0.000E-01
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 80 TO 90 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	1.533E-11
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 90 TO 100 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	3.056E-08
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 100 TO 110 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	1.072E-06
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 110 TO 120 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	4.107E-06
0.600	20.000	0.000	0.000E-01
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01

1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 120 TO 130 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.043E-06
0.600	20.000	0.000	1.318E-11
0.650	20.000	0.000	0.000E-01
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 130 TO 140 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.521E-06
0.600	20.000	0.000	5.148E-09
0.650	20.000	0.000	1.125E-11
0.700	20.000	0.000	0.000E-01
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 140 TO 150 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.587E-06
0.600	20.000	0.000	2.029E-07
0.650	20.000	0.000	3.288E-09
0.700	20.000	0.000	9.434E-12
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 150 TO 160 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.694E-06
0.650	20.000	0.000	1.252E-07
0.700	20.000	0.000	2.128E-09
0.800	20.000	0.000	0.000E-01
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 160 TO 170 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	5.205E-06

0.650	20.000	0.000	1.151E-06
0.700	20.000	0.000	7.743E-08
0.800	20.000	0.000	6.451E-12
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 170 TO 180 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	8.782E-06
0.650	20.000	0.000	4.064E-06
0.700	20.000	0.000	7.642E-07
0.800	20.000	0.000	9.329E-10
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 180 TO 190 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.077E-05
0.650	20.000	0.000	7.784E-06
0.700	20.000	0.000	3.037E-06
0.800	20.000	0.000	3.044E-08
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 190 TO 200 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.148E-05
0.650	20.000	0.000	1.041E-05
0.700	20.000	0.000	6.548E-06
0.800	20.000	0.000	3.276E-07
1.000	20.000	0.000	0.000E-01

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 200 TO 210 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.181E-05
0.650	20.000	0.000	1.172E-05
0.700	20.000	0.000	9.787E-06
0.800	20.000	0.000	1.346E-06
1.000	20.000	0.000	4.279E-13

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 210 TO 220 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.210E-05
0.650	20.000	0.000	1.209E-05
0.700	20.000	0.000	1.146E-05
0.800	20.000	0.000	4.049E-06
1.000	20.000	0.000	5.804E-11

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 220 TO 230 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.245E-05
0.700	20.000	0.000	1.210E-05
0.800	20.000	0.000	7.356E-06
1.000	20.000	0.000	2.396E-09

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 230 TO 240 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.250E-05
0.800	20.000	0.000	9.907E-06
1.000	20.000	0.000	3.815E-08

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 240 TO 250 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.250E-05
0.800	20.000	0.000	1.131E-05
1.000	20.000	0.000	2.830E-07

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 250 TO 260 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.195E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.198E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	1.146E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 260 TO 270 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.229E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	2.915E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 270 TO 280 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.241E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	5.275E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 280 TO 290 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	7.525E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 290 TO 300 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	9.183E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 300 TO 310 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.218E-05
0.700	20.000	0.000	1.230E-05
0.800	20.000	0.000	1.191E-05
1.000	20.000	0.000	9.965E-06

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 310 TO 320 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.233E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	1.080E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 320 TO 330 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.210E-05
1.000	20.000	0.000	1.124E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 330 TO 340 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.120E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 340 TO 350 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.221E-05
0.800	20.000	0.000	1.228E-05
1.000	20.000	0.000	1.097E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 350 TO 360 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.229E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.226E-05

1.000	20.000	0.000	1.071E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 360 TO 370 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.241E-05
0.800	20.000	0.000	1.203E-05
1.000	20.000	0.000	1.076E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 370 TO 380 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	1.083E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 380 TO 390 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.090E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 390 TO 400 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.233E-05
1.000	20.000	0.000	1.097E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 400 TO 410 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05

0.650	20.000	0.000	1.228E-05
0.700	20.000	0.000	1.215E-05
0.800	20.000	0.000	1.206E-05
1.000	20.000	0.000	1.032E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 410 TO 420 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.239E-05
0.800	20.000	0.000	1.177E-05
1.000	20.000	0.000	1.055E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 420 TO 430 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.183E-05
1.000	20.000	0.000	1.102E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 430 TO 440 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.207E-05
1.000	20.000	0.000	1.133E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 440 TO 450 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.231E-05
1.000	20.000	0.000	1.128E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 450 TO 460 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.185E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.229E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	1.117E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 460 TO 470 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.210E-05
1.000	20.000	0.000	1.125E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 470 TO 480 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.111E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 480 TO 490 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.089E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 490 TO 500 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	1.078E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 500 TO 510 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.078E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 510 TO 520 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.084E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 520 TO 530 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.089E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 530 TO 540 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	1.092E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 540 TO 550 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.221E-05
0.800	20.000	0.000	1.228E-05
1.000	20.000	0.000	1.093E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 550 TO 560 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.185E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.229E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.093E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 560 TO 570 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 570 TO 580 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 580 TO 590 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 590 TO 600 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05

1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 600 TO 610 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.083E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 610 TO 620 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.089E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 620 TO 630 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.217E-05
1.000	20.000	0.000	1.092E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 630 TO 640 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	1.093E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 640 TO 650 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05

0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.221E-05
0.800	20.000	0.000	1.228E-05
1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 650 TO 660 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.229E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.226E-05
1.000	20.000	0.000	1.072E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 660 TO 670 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.241E-05
0.800	20.000	0.000	1.203E-05
1.000	20.000	0.000	1.083E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 670 TO 680 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	1.090E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 680 TO 690 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.094E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 690 TO 700 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)

0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.233E-05
1.000	20.000	0.000	1.099E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 700 TO 710 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.185E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.229E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	1.102E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 710 TO 720 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.210E-05
1.000	20.000	0.000	1.131E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 720 TO 730 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.123E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 730 TO 740 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.098E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 740 TO 750 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	1.083E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 750 TO 760 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.195E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.199E-05
0.800	20.000	0.000	1.226E-05
1.000	20.000	0.000	1.081E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 760 TO 770 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.229E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.226E-05
1.000	20.000	0.000	1.085E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 770 TO 780 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.241E-05
0.800	20.000	0.000	1.203E-05
1.000	20.000	0.000	1.089E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 780 TO 790 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	1.092E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 790 TO 800 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.095E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 800 TO 810 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.218E-05
0.700	20.000	0.000	1.230E-05
0.800	20.000	0.000	1.191E-05
1.000	20.000	0.000	1.055E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 810 TO 820 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.233E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	1.102E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 820 TO 830 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.210E-05
1.000	20.000	0.000	1.131E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 830 TO 840 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.216E-05

1.000	20.000	0.000	1.123E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 840 TO 850 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.221E-05
0.800	20.000	0.000	1.228E-05
1.000	20.000	0.000	1.098E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 850 TO 860 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.229E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.226E-05
1.000	20.000	0.000	1.072E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 860 TO 870 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.241E-05
0.800	20.000	0.000	1.203E-05
1.000	20.000	0.000	1.076E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 870 TO 880 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.198E-05
1.000	20.000	0.000	1.083E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 880 TO 890 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05

0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.090E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 890 TO 900 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.233E-05
1.000	20.000	0.000	1.097E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 900 TO 910 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.215E-05
0.650	20.000	0.000	1.228E-05
0.700	20.000	0.000	1.215E-05
0.800	20.000	0.000	1.206E-05
1.000	20.000	0.000	1.032E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 910 TO 920 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.169E-05
0.650	20.000	0.000	1.253E-05
0.700	20.000	0.000	1.239E-05
0.800	20.000	0.000	1.177E-05
1.000	20.000	0.000	1.055E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 920 TO 930 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.227E-05
0.700	20.000	0.000	1.263E-05
0.800	20.000	0.000	1.183E-05
1.000	20.000	0.000	1.102E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 930 TO 940 SECONDS

RECEPTORS
X (KM) Y (KM) Z (M) CONCENTRATION (G/M**3)

0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.254E-05
0.800	20.000	0.000	1.207E-05
1.000	20.000	0.000	1.133E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 940 TO 950 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.166E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.222E-05
0.800	20.000	0.000	1.231E-05
1.000	20.000	0.000	1.128E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 950 TO 960 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.590E-06
0.600	20.000	0.000	1.185E-05
0.650	20.000	0.000	1.215E-05
0.700	20.000	0.000	1.229E-05
0.800	20.000	0.000	1.201E-05
1.000	20.000	0.000	1.117E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 960 TO 970 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.211E-05
0.650	20.000	0.000	1.219E-05
0.700	20.000	0.000	1.232E-05
0.800	20.000	0.000	1.210E-05
1.000	20.000	0.000	1.125E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 970 TO 980 SECONDS

RECEPTORS X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.168E-05
0.650	20.000	0.000	1.247E-05
0.700	20.000	0.000	1.234E-05
0.800	20.000	0.000	1.214E-05
1.000	20.000	0.000	1.111E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 980 TO 990 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.145E-05
0.650	20.000	0.000	1.224E-05
0.700	20.000	0.000	1.256E-05
0.800	20.000	0.000	1.216E-05
1.000	20.000	0.000	1.089E-05

10 SEC AVG. CONCENTRATION AT RECEPTORS DURING INTERMEDIATE PERIOD 990 TO 1000 SECONDS

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.823E-07
0.400	20.000	0.000	6.593E-06
0.600	20.000	0.000	1.155E-05
0.650	20.000	0.000	1.193E-05
0.700	20.000	0.000	1.251E-05
0.800	20.000	0.000	1.218E-05
1.000	20.000	0.000	1.078E-05

PUFF#	X (M)	Y (M)	Z (M)	TIME (MILLISEC)	TOTAL Q (GRAMS)	SY (M)	SZ (M)	TRAV. D. (KM)	KEYP
1	3482.602	20000.000	35.488	39999	35.98	212.173	87.299	3.483	1
2	3246.801	20000.000	35.488	105000	30.84	199.237	82.416	3.247	1
3	2992.861	20000.000	35.488	175000	41.12	185.193	77.089	2.993	1
4	2775.198	20000.000	35.488	235000	20.56	173.054	72.460	2.775	1
5	2630.090	20000.000	35.488	275000	20.56	164.905	69.341	2.630	1
6	2448.705	20000.000	35.488	325000	30.84	154.652	65.399	2.449	1
7	2267.319	20000.000	35.488	375000	20.56	144.320	61.407	2.267	1
8	2122.211	20000.000	35.488	415000	20.56	135.993	58.175	2.122	1
9	1995.241	20000.000	35.488	450000	15.42	128.658	55.315	1.995	1
10	1868.271	20000.000	35.488	485000	20.56	121.276	52.424	1.868	1
11	1723.163	20000.000	35.488	525000	20.56	112.776	49.079	1.723	1
12	1596.193	20000.000	35.488	560000	15.42	105.279	46.112	1.596	1
13	1469.223	20000.000	35.488	595000	20.56	97.723	43.105	1.469	1
14	1360.392	20000.000	35.488	625000	10.28	91.195	40.492	1.360	1
15	1287.837	20000.000	35.488	645000	10.28	86.815	38.731	1.288	1
16	1197.145	20000.000	35.488	670000	15.42	81.305	36.505	1.197	1
17	1088.313	20000.000	35.488	700000	15.42	74.640	33.796	1.088	1
18	997.621	20000.000	35.488	725000	10.28	69.037	31.503	0.998	1
19	925.066	20000.000	35.488	745000	10.28	64.520	29.644	0.925	1
20	852.512	20000.000	35.488	765000	10.28	59.969	27.760	0.853	1
21	779.958	20000.000	35.488	785000	10.28	55.382	25.849	0.780	1
22	707.404	20000.000	35.488	805000	10.28	50.756	23.908	0.707	1
23	634.850	20000.000	35.488	825000	10.28	46.084	21.932	0.635	1
24	562.295	20000.000	35.488	845000	10.28	41.365	19.919	0.562	1
25	507.880	20000.000	35.488	860000	5.14	37.793	18.383	0.508	1
26	471.603	20000.000	35.488	870000	5.14	35.391	17.343	0.472	1
27	435.325	20000.000	35.488	880000	5.14	32.974	16.290	0.435	1
28	399.048	20000.000	35.488	890000	5.14	30.538	15.222	0.399	1
29	362.771	20000.000	35.488	900000	5.14	28.084	14.139	0.363	1
30	326.494	20000.000	35.488	910000	5.14	25.609	13.038	0.326	1
31	290.217	20000.000	35.488	920000	5.14	23.112	11.917	0.290	1
32	253.940	20000.000	35.488	930000	5.14	20.588	10.773	0.254	1
33	217.663	20000.000	35.488	940000	5.14	18.035	9.604	0.218	1
34	181.386	20000.000	35.488	950000	5.14	15.448	8.404	0.181	1
35	145.108	20000.000	35.488	960000	5.14	12.821	7.167	0.145	1
36	108.831	20000.000	35.488	970000	5.14	10.145	5.883	0.109	1
37	72.554	20000.000	35.488	980000	5.14	7.404	4.537	0.073	1
38	36.277	20000.000	35.488	990000	5.14	4.573	3.101	0.036	1
39	0.000	20000.000	35.488	1000000	5.14	1.500	1.500	0.000	1

1000 SEC AVG. CONCENTRATION AT RECEPTORS FOR SIMULATION PERIOD 0 TO 1000 SECONDS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.713E-07
0.400	20.000	0.000	5.848E-06
0.600	20.000	0.000	9.752E-06
0.650	20.000	0.000	9.979E-06
0.700	20.000	0.000	9.980E-06
0.800	20.000	0.000	9.431E-06
1.000	20.000	0.000	7.911E-06

* *

0.28 HR AVG. CONCENTRATION AT RECEPTORS FOR ALL SIMULATION PERIODS
DUE TO SOURCE NUMBER 1

RECEPTORS			
X (KM)	Y (KM)	Z (M)	CONCENTRATION (G/M**3)
0.200	20.000	0.000	1.713E-07
0.400	20.000	0.000	5.848E-06
0.600	20.000	0.000	9.752E-06
0.650	20.000	0.000	9.979E-06
0.700	20.000	0.000	9.980E-06
0.800	20.000	0.000	9.431E-06
1.000	20.000	0.000	7.911E-06

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-47

ISC-ST MODEL RUN

FOR

1982 FOR FUGITIVE EMISSIONS

```
1            ISCST - VERSION 3.4 (DATED 88348)

             IBM-PC VERSION (1.64)
             (C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
             SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
             RUN BEGAN ON 09-08-90 AT 13:38:05

1
                       *** Fugitive Emissions -- 1982 Met Data                         ***

         CALCULATE (CONCENTRATION=1,DEPOSITION=2)                              ISW(1) =   1
         RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)               ISW(2) =   4
         DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)                      ISW(3) =   1
         TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                              ISW(4) =   0
         CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                         ISW(5) =   0
         LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)                      ISW(6) =   1

         COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
         WITH THE FOLLOWING TIME PERIODS:
           HOURLY (YES=1,NO=0)                                                 ISW(7) =   1
           2-HOUR (YES=1,NO=0)                                                 ISW(8) =   0
           3-HOUR (YES=1,NO=0)                                                 ISW(9) =   1
           4-HOUR (YES=1,NO=0)                                                ISW(10) =   0
           6-HOUR (YES=1,NO=0)                                                ISW(11) =   0
           8-HOUR (YES=1,NO=0)                                                ISW(12) =   1
           12-HOUR (YES=1,NO=0)                                               ISW(13) =   0
           24-HOUR (YES=1,NO=0)                                               ISW(14) =   1
         PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                                  ISW(15) =   1

         PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
         SPECIFIED BY ISW(7) THROUGH ISW(14):
           DAILY TABLES (YES=1,NO=0)                                          ISW(16) =   0
           HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)                       ISW(17) =   1
           MAXIMUM 50 TABLES (YES=1,NO=0)                                     ISW(18) =   0
         METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)            ISW(19) =   1
         RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)    ISW(20) =   0
         WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)            ISW(21) =   1
         VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)     ISW(22) =   1
         SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)                    ISW(23) =   0
         PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)                ISW(24) =   1
         PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)          ISW(25) =   2
         PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)                ISW(26) =   1
         CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)              ISW(27) =   1
         REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                              ISW(28) =   1
         TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)                     ISW(29) =   2
         DEBUG OPTION CHOSEN (YES=1,NO=2)                                     ISW(30) =   2
         ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)                  ISW(31) =   0

         NUMBER OF INPUT SOURCES                                               NSOURC =  10
         NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                              NGROUP =   0
         TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)                  IPERD =   0
```

NUMBER OF X (RANGE) GRID VALUES	NXPNTS = 8
NUMBER OF Y (THETA) GRID VALUES	NYPNTS = 36
NUMBER OF DISCRETE RECEPTORS	NXWYPT = 0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR = 10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET = 9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY = .000000E+00
SURFACE STATION NO.	ISS = 12842
YEAR OF SURFACE DATA	ISY = 82
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 82
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 9538 WORDS

1

*** Fugitive Emissions -- 1982 Met Data ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY WIND SPEED CATEGORY

CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

1

*** Fugitive Emissions -- 1982 Met Data ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

100.0, 200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

360.0,	10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,
100.0,	110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,
200.0,	210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,
300.0,	310.0,	320.0,	330.0,	340.0,	350.0,				

1

*** Fugitive Emissions -- 1982 Met Data ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	.36500E-01	.0	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
2	0	0	0	.36500E-01	91.4	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
3	0	0	0	.36500E-01	-91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
4	0	0	0	.36500E-01	.0	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
5	0	0	0	.36500E-01	91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
6	0	0	0	.36500E-01	-182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
7	0	0	0	.36500E-01	-91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
8	0	0	0	.36500E-01	.0	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
9	0	0	0	.36500E-01	91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
10	0	0	0	.36500E-01	182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00

* CALM HOURS (=1) FOR DAY 1 * 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0

```
* CALM HOURS (=1) FOR DAY   6 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  0
* CALM HOURS (=1) FOR DAY   7 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  0
* CALM HOURS (=1) FOR DAY   8 *  1  0  1  0  0  0  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY   9 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  10 *  0  0  0  1  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  16 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1  1
* CALM HOURS (=1) FOR DAY  17 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY  18 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  1
* CALM HOURS (=1) FOR DAY  19 *  1  1  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  1
* CALM HOURS (=1) FOR DAY  20 *  0  0  0  1  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  21 *  0  0  0  0  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  0
* CALM HOURS (=1) FOR DAY  22 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0
* CALM HOURS (=1) FOR DAY  25 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  1  0
* CALM HOURS (=1) FOR DAY  35 *  1  0  1  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  37 *  0  0  1  1  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  41 *  1  0  0  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  42 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  49 *  1  0  1  0  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  50 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
* CALM HOURS (=1) FOR DAY  51 *  1  0  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  54 *  0  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
* CALM HOURS (=1) FOR DAY  55 *  1  1  0  0  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1
* CALM HOURS (=1) FOR DAY  56 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  61 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  62 *  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  63 *  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY  65 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
* CALM HOURS (=1) FOR DAY  70 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
* CALM HOURS (=1) FOR DAY  71 *  0  1  0  0  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
* CALM HOURS (=1) FOR DAY  72 *  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  73 *  0  0  0  1  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0
* CALM HOURS (=1) FOR DAY  74 *  0  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  75 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
* CALM HOURS (=1) FOR DAY  76 *  0  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY  77 *  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 101 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 104 *  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 105 *  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 108 *  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 112 *  0  0  1  0  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 117 *  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 129 *  0  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 131 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 132 *  0  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 134 *  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 135 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 136 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 137 *  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 140 *  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 157 *  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 161 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 166 *  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

* CALM HOURS (=1) FOR DAY 168 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 170 *	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 171 *	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 175 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 176 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 177 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 180 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 183 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 184 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 185 *	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 186 *	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 187 *	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 188 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 189 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 190 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 197 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 198 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 199 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 200 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 201 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 204 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 207 *	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 209 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 210 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 211 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 212 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 213 *	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 214 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 216 *	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 221 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 222 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 223 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 224 *	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 225 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 226 *	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 228 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 232 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 233 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 236 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 239 *	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 245 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 247 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 256 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 260 *	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 261 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 262 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 263 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 265 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 268 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 269 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 270 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 284 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 288 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 289 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1
* CALM HOURS (=1) FOR DAY 290 *	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 317 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 319 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 326 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 327 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 328 *	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 334 *	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 345 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 356 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 365 *	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

1

'N'-DAY
365 DAYS
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 24.65302 AND OCCURRED AT (100.0, 230.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0	1000.0	1500.0	2000.0
350.0 /	14.83313	6.25673	2.73062	1.49407	1.01995	.31770	.16303	.10064
340.0 /	19.02616	7.73824	3.31218	1.89758	1.22762	.37473	.20209	.13248
330.0 /	19.42500	8.41569	4.27322	2.54231	1.69502	.48434	.23723	.14466
320.0 /	20.24432	9.43228	5.12453	3.19317	2.15367	.70101	.37492	.23993
310.0 /	20.72775	9.99937	5.91880	3.94311	2.83851	.92124	.47767	.30075
300.0 /	22.39033	11.79722	6.85115	4.60792	3.33066	1.13713	.61843	.39772
290.0 /	22.57147	13.02417	7.85394	5.16817	3.58574	1.13763	.56944	.35125
280.0 /	22.34154	14.80678	8.76665	5.79512	4.01328	1.15166	.59195	.36955
270.0 /	20.17403	17.62289	10.74721	6.32686	4.16292	1.23021	.64630	.40752
260.0 /	21.05390	20.48197	12.10260	6.98987	4.63901	1.24952	.61014	.37605
250.0 /	24.22776	21.76107	14.48077	7.85379	5.13162	1.51958	.78004	.48782
240.0 /	24.55737	18.42084	15.55975	8.73078	5.59888	1.63227	.83198	.51770
230.0 /	24.65302	21.27571	10.52625	6.74459	4.55346	1.37646	.70300	.43779
220.0 /	24.32715	14.82522	7.93659	4.68503	3.04217	.87971	.43674	.26278
210.0 /	23.34991	13.81500	5.78240	3.29044	2.01208	.45475	.21200	.12461
200.0 /	22.43686	10.84279	4.70134	2.49894	1.52841	.34239	.17009	.10607
190.0 /	20.45695	9.49193	4.06262	2.05876	1.34833	.37575	.18718	.11555
180.0 /	15.44054	9.27666	3.67595	1.97272	1.28379	.40657	.21626	.13959
170.0 /	17.92781	8.08869	3.43211	1.87954	1.31393	.36908	.18417	.11293
160.0 /	19.53292	8.85506	3.49453	1.99584	1.31236	.34588	.17227	.10700
150.0 /	19.09673	9.71592	3.44432	2.17108	1.41483	.39978	.20580	.12705
140.0 /	17.81003	9.66258	4.07796	2.37155	1.56183	.48841	.24063	.14631
130.0 /	16.58387	10.93488	4.22340	2.56378	1.64955	.47780	.25283	.16347
120.0 /	15.43898	7.22839	4.66674	2.26710	1.40589	.37884	.19147	.12085
110.0 /	14.36121	8.16350	3.76857	1.92352	1.14517	.30545	.14830	.09059
100.0 /	11.37167	6.85025	3.03529	1.62876	.96901	.26770	.13039	.07852
90.0 /	10.22371	6.10023	2.73780	1.44100	.87381	.25383	.11889	.07055
80.0 /	11.84639	5.41211	2.52133	1.37785	.87341	.22132	.10849	.06337
70.0 /	11.85461	5.18356	2.37343	1.39946	.89236	.24199	.11565	.06936
60.0 /	11.83336	5.23809	2.37681	1.41300	.92512	.26707	.12915	.07994
50.0 /	11.61204	5.39503	2.42353	1.41271	.92210	.27232	.13849	.08883
40.0 /	18.13697	5.41712	2.35158	1.42625	.96835	.26960	.13815	.08719
30.0 /	16.65028	4.87638	2.03734	1.25333	.87366	.26053	.13404	.08454
20.0 /	17.11456	5.06447	2.09775	1.20318	.76341	.20758	.10267	.06393
10.0 /	16.96744	4.98634	2.06003	1.17938	.77595	.21193	.10705	.06633
360.0 /	12.25706	5.71132	2.28887	1.33834	.89813	.25364	.13061	.08182

1

HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58020 AND OCCURRED AT (200.0, 180.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	360.97050 (223,24)	335.15180 (209, 6)	197.62930 (209, 6)	183.85290 (209, 6)	193.28680 (209, 6)
340.0 /	342.97750 (319, 1)	327.88920 (210,23)	221.42370 (74, 1)	178.91440 (209, 6)	175.10860 (209, 6)
330.0 /	400.89300 (184, 6)	380.37550 (263, 6)	267.01880 (202, 1)	155.26490 (176,23)	138.93850 (209, 6)
320.0 /	429.49720 (263, 7)	268.97020 (260,20)	178.70560 (8, 5)	159.92280 (263, 6)	121.61100 (223,24)
310.0 /	429.49820 (263, 6)	247.18460 (263, 6)	171.08140 (145, 2)	129.32210 (263, 7)	94.34502 (202, 1)
300.0 /	409.16260 (148, 1)	340.91570 (176,23)	211.27780 (223,24)	134.36760 (156, 2)	94.43842 (8, 5)
290.0 /	441.98500 (274,18)	311.61250 (22,22)	207.49720 (261, 1)	148.78910 (260,20)	115.79580 (193, 4)
280.0 /	371.33980 (162,24)	401.02780 (170, 4)	206.18350 (246, 7)	148.44920 (177, 1)	117.50000 (137, 4)
270.0 /	516.64280 (76, 2)	603.27200 (76, 2)	340.85190 (76, 2)	212.79300 (76, 2)	146.63360 (76, 2)
260.0 /	371.34000 (222, 5)	335.21010 (190, 2)	278.80620 (22, 3)	344.66610 (217, 3)	271.93530 (73, 5)
250.0 /	341.56290 (233,23)	327.58670 (2,22)	518.03140 (200, 4)	219.76690 (247,24)	152.59060 (220, 4)
240.0 /	393.92250 (61, 7)	549.57900 (200, 4)	397.78310 (107,23)	248.05070 (323, 1)	170.92180 (259, 7)
230.0 /	429.49680 (261, 3)	387.19990 (344,21)	251.52670 (322,21)	221.92890 (270,24)	138.94850 (240,22)
220.0 /	367.43710 (221,22)	367.99520 (182, 6)	245.80250 (270,20)	175.74840 (270,24)	120.67380 (270,24)
210.0 /	490.79010 (260, 6)	381.06480 (270,20)	215.82250 (20,21)	130.45050 (270,24)	86.33573 (107,22)
200.0 /	484.96620 (184,24)	327.58700 (107,22)	299.48440 (270,20)	142.28480 (179, 2)	105.68750 (222,23)
190.0 /	487.18180 (200, 4)	300.33250 (20,21)	207.96020 (353, 5)	163.00370 (7, 6)	112.93690 (222,23)
180.0 /	545.97800 (258,24)	629.58020 (258,24)	346.44210 (258,24)	214.76290 (258,24)	147.51660 (258,24)
170.0 /	463.81310 (48,23)	332.21930 (186, 4)	206.78140 (222,23)	204.83710 (270,20)	145.75070 (258,24)
160.0 /	513.62710 (184, 6)	325.36260 (1, 3)	302.76060 (7, 6)	184.60610 (105, 4)	120.32290 (353, 5)
150.0 /	481.89270 (199,20)	481.91290 (7, 6)	221.89960 (222,23)	131.79430 (118, 2)	114.99680 (105,21)
140.0 /	356.82690 (179, 8)	343.63130 (174,23)	262.98990 (7, 6)	160.84860 (77, 2)	131.59310 (105,21)
130.0 /	352.07040 (169,22)	376.29490 (197,22)	418.27180 (105,21)	217.92040 (77, 2)	137.98010 (76,23)
120.0 /	428.17120 (101, 7)	525.67350 (48,23)	347.76330 (51, 5)	210.85520 (237,24)	138.06050 (237,24)
110.0 /	580.18460 (61, 7)	322.97870 (157, 1)	512.72170 (19,20)	156.89460 (234,24)	114.22350 (214, 5)
100.0 /	328.83610 (263, 6)	364.09590 (58,22)	205.52430 (236, 1)	335.59350 (235,24)	265.68190 (213, 2)
90.0 /	545.97800 (213, 2)	629.58020 (213, 2)	346.44210 (213, 2)	214.76500 (213, 2)	147.53550 (213, 2)
80.0 /	325.16570 (131,20)	292.44170 (33,20)	206.18350 (236, 2)	163.22590 (19,20)	112.65810 (184,24)
70.0 /	376.11410 (64,18)	260.87220 (239,19)	202.60660 (79,22)	132.21950 (170,21)	115.79580 (170,21)
60.0 /	421.01170 (274,18)	470.68980 (235,24)	228.42520 (222,21)	158.14140 (170,21)	106.31140 (170,21)
50.0 /	429.49830 (185, 2)	425.36750 (165, 1)	230.57670 (175,21)	190.04790 (175,21)	143.76530 (175,21)
40.0 /	362.27600 (209, 6)	289.64820 (316,20)	244.90750 (364,19)	180.53210 (81, 5)	133.29690 (81, 5)
30.0 /	269.19130 (16, 9)	380.37590 (185, 2)	223.39090 (333,19)	154.01690 (81, 5)	114.08270 (7,24)
20.0 /	321.25900 (333,19)	353.03250 (236, 7)	276.12820 (265, 5)	186.72110 (260,21)	110.27930 (59, 2)
10.0 /	355.99520 (222,21)	388.25900 (74, 1)	202.94780 (63,23)	202.88240 (59, 3)	147.38890 (59, 1)
360.0 /	496.40020 (265, 5)	570.73080 (265, 5)	311.47790 (265, 5)	191.95810 (265, 5)	131.26510 (265, 5)

1

HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58020 AND OCCURRED AT (200.0, 180.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	102.29760 (209, 6)	44.15765 (209, 6)	27.00652 (63,23)
340.0 /	166.06500 (209, 6)	150.91790 (209, 6)	134.07470 (209, 6)
330.0 /	66.45282 (209, 6)	34.52459 (17,24)	27.78183 (17,24)
320.0 /	51.05585 (226, 5)	36.27763 (202, 1)	28.25499 (263, 7)
310.0 /	47.24693 (8, 5)	35.85094 (156, 2)	28.52556 (21, 4)
300.0 /	52.03748 (230, 5)	37.65559 (230, 5)	29.58911 (148, 1)
290.0 /	57.54279 (21, 6)	40.22811 (21, 6)	31.25564 (21, 6)
280.0 /	54.74670 (137, 4)	42.22206 (177, 1)	32.79879 (177, 1)
270.0 /	72.86909 (74, 6)	47.39430 (321,21)	35.04828 (260, 6)
260.0 /	79.82024 (73, 6)	47.73878 (270, 4)	35.23217 (227,23)
250.0 /	67.53719 (190, 2)	46.49595 (15,19)	35.46334 (15,19)
240.0 /	70.98037 (216, 5)	47.79501 (344,21)	35.64310 (344,21)
230.0 /	65.71793 (207, 5)	46.01254 (261, 3)	34.60542 (208, 2)
220.0 /	54.88900 (270,24)	39.37426 (270,24)	27.16195 (270,24)
210.0 /	51.19288 (266, 4)	35.26853 (266, 4)	25.66847 (266, 4)
200.0 /	45.39907 (10, 3)	35.24790 (10, 3)	28.30679 (10, 3)
190.0 /	47.28080 (222,23)	34.04064 (222,23)	27.13341 (222,23)
180.0 /	113.06820 (61, 7)	93.43745 (61, 7)	76.01987 (61, 7)
170.0 /	123.72490 (61, 7)	83.51974 (61, 7)	57.11557 (61, 7)
160.0 /	48.30990 (190,24)	34.86072 (186, 4)	27.10992 (186, 4)
150.0 /	46.71394 (105,21)	35.01627 (174,23)	28.36132 (174,23)
140.0 /	54.82446 (186,24)	38.63270 (77, 2)	29.63180 (118, 2)
130.0 /	56.18473 (164, 4)	39.81912 (51, 4)	30.41802 (51, 4)
120.0 /	52.27779 (103,24)	33.44164 (103,24)	23.93435 (183, 5)
110.0 /	50.05703 (174,21)	33.39457 (174,21)	24.07165 (174,21)
100.0 /	70.05997 (19,20)	35.68077 (164,22)	25.65725 (165, 3)
90.0 /	75.42521 (235,24)	35.45762 (213, 2)	29.81328 (213, 2)
80.0 /	53.15743 (236, 2)	30.19598 (236, 2)	19.93012 (214, 2)
70.0 /	45.91440 (170,21)	31.61082 (235, 1)	24.69349 (235, 1)
60.0 /	57.16910 (165, 1)	41.87502 (165, 1)	32.23290 (165, 1)
50.0 /	65.18825 (175,21)	44.15961 (175,21)	31.95053 (175,21)
40.0 /	56.09976 (81, 5)	39.33895 (81, 5)	30.11836 (81, 5)
30.0 /	50.17777 (49, 2)	29.91173 (49, 2)	22.78442 (316,20)
20.0 /	46.93153 (37, 6)	35.56910 (333,19)	28.23814 (333,19)
10.0 /	43.89415 (59, 2)	33.99418 (59, 2)	27.46218 (59, 2)
360.0 /	46.05263 (59, 1)	33.45502 (59, 1)	27.04733 (59, 1)

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2ND HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 607.38510 AND OCCURRED AT (200.0, 180.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	344.01380 (352,16)	292.66360 (33,21)	185.04820 (236, 7)	142.86050 (63,23)	112.27070 (63,23)
340.0 /	342.77780 (18, 9)	291.33570 (145, 2)	202.57840 (8, 2)	97.88651 (74, 1)	67.29359 (73,24)
330.0 /	374.01820 (200, 4)	367.96170 (21, 4)	227.44170 (263, 7)	146.12900 (209, 6)	108.04430 (145, 2)
320.0 /	386.26080 (202, 1)	259.86980 (193,24)	178.60660 (49, 5)	158.23360 (22, 2)	102.10400 (210, 1)
310.0 /	396.94340 (22, 2)	243.47490 (7, 5)	152.15140 (210,23)	108.68720 (176,23)	79.78390 (21, 4)
300.0 /	409.16260 (190,23)	337.55410 (263, 7)	203.06220 (263, 6)	134.36760 (233, 2)	94.41637 (49, 5)
290.0 /	342.77760 (194,18)	306.06290 (8, 6)	204.46350 (241, 5)	148.35290 (193,24)	115.30930 (46,24)
280.0 /	367.13660 (165,24)	401.02780 (196, 3)	205.62970 (176,24)	146.83110 (137, 4)	116.51720 (328, 5)
270.0 /	511.61760 (7, 3)	598.73500 (7, 3)	339.86540 (7, 3)	212.44320 (7, 3)	146.47280 (7, 3)
260.0 /	333.07730 (227,23)	315.57850 (138, 4)	275.93960 (170, 4)	344.66610 (284, 1)	271.60450 (125, 4)
250.0 /	332.06570 (230, 5)	327.58670 (191, 1)	518.03140 (208, 4)	214.27300 (124, 3)	150.94540 (140, 5)
240.0 /	379.72670 (131,20)	549.57900 (208, 4)	386.00090 (322,21)	247.00380 (329, 5)	169.34740 (323, 1)
230.0 /	418.90590 (208, 2)	387.19760 (216, 5)	244.90720 (107,23)	215.94360 (300, 3)	133.28380 (139, 4)
220.0 /	334.76820 (217, 3)	339.56060 (247, 8)	244.90750 (270,24)	172.54570 (300, 3)	119.32450 (300, 3)
210.0 /	481.89290 (232, 7)	374.19630 (11,22)	212.27510 (10, 3)	128.55770 (300, 3)	83.82496 (270,24)
200.0 /	483.62740 (184, 6)	312.57600 (6,22)	221.95930 (266, 4)	106.69200 (282,22)	97.45865 (54,21)
190.0 /	487.18180 (208, 4)	299.32060 (174,23)	186.20760 (1, 3)	147.33590 (61, 7)	111.36620 (62, 7)
180.0 /	521.20720 (56,21)	607.38510 (56,21)	341.74020 (56,21)	213.10540 (56,21)	146.75660 (56,21)
170.0 /	432.39310 (200, 4)	332.21930 (262, 1)	197.02690 (179, 2)	151.93650 (72,23)	144.98110 (56,21)
160.0 /	486.88500 (184,24)	324.23500 (186,24)	270.21110 (215,23)	150.29650 (61, 7)	90.26173 (25,22)
150.0 /	437.50890 (232, 7)	469.85920 (61, 7)	194.19690 (54,21)	130.94510 (105,21)	114.99680 (334,20)
140.0 /	349.33290 (235,24)	289.66160 (236,22)	243.17390 (186,24)	156.76410 (118, 2)	131.59310 (334,20)
130.0 /	352.07040 (246,22)	372.38950 (318,18)	418.27180 (334,20)	208.72740 (118, 2)	137.82750 (76,24)
120.0 /	382.35210 (42, 5)	522.51590 (19,20)	327.73000 (169,22)	191.30470 (157, 1)	115.64610 (157, 1)
110.0 /	458.51740 (42, 6)	314.93440 (236, 1)	502.76540 (48,23)	154.38900 (164,22)	107.61470 (234,24)
100.0 /	323.36940 (264,11)	272.31880 (317, 3)	202.92480 (55,20)	286.53630 (236, 1)	263.22490 (50,20)
90.0 /	511.61760 (50,20)	598.73500 (50,20)	339.86540 (50,20)	212.44310 (50,20)	146.47010 (50,20)
80.0 /	304.29840 (8,11)	259.17470 (103,24)	205.62970 (364,19)	154.99520 (48,23)	110.05060 (213, 2)
70.0 /	367.84950 (247,10)	256.45950 (234,24)	199.80500 (235,24)	131.16670 (21,19)	115.16490 (21,19)
60.0 /	372.91490 (42, 5)	445.19150 (236, 1)	209.38330 (58,24)	156.47440 (21,19)	105.59450 (21,19)
50.0 /	386.25890 (222,21)	320.65110 (233,23)	174.72970 (185, 2)	142.08420 (235, 4)	108.69630 (185, 2)
40.0 /	344.76670 (239,19)	275.18580 (236, 8)	239.53990 (37, 5)	175.74880 (364,19)	121.21210 (58,24)
30.0 /	269.19130 (143,19)	379.48080 (33,20)	146.10660 (37, 6)	141.41420 (364,19)	108.03330 (74,21)
20.0 /	301.48860 (17,24)	286.18240 (2,21)	206.44780 (333,21)	182.95150 (33,20)	99.97264 (7,24)
10.0 /	354.59270 (58,24)	342.92330 (8, 2)	162.04430 (201, 4)	121.77350 (59, 2)	113.79930 (265, 5)
360.0 /	480.74890 (59, 1)	556.75290 (59, 1)	308.56070 (59, 1)	190.93770 (59, 1)	130.79990 (59, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 607.38510 AND OCCURRED AT (200.0, 180.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	46.98619 (63,23)	33.58296 (63,23)	23.49658 (236, 7)
340.0 /	44.05945 (317, 7)	38.59540 (317, 7)	33.13316 (317, 7)
330.0 /	46.44230 (210,23)	31.45595 (161, 3)	26.11715 (161, 3)
320.0 /	48.78951 (202, 1)	35.42652 (263, 7)	26.55616 (202, 1)
310.0 /	47.24354 (49, 5)	35.85094 (233, 2)	28.15981 (156, 2)
300.0 /	50.17368 (148, 1)	37.40782 (148, 1)	29.58911 (190,23)
290.0 /	53.12447 (224, 1)	37.48344 (22, 3)	29.74363 (22, 3)
280.0 /	54.72201 (177, 1)	41.57649 (7, 5)	32.67439 (137, 4)
270.0 /	64.98093 (217, 3)	47.34014 (80, 1)	35.02057 (47, 3)
260.0 /	79.78777 (7, 4)	47.06436 (227,23)	35.19146 (131, 5)
250.0 /	67.38242 (138, 4)	45.45203 (190, 2)	34.33357 (71, 3)
240.0 /	69.42506 (344,21)	47.73862 (22,21)	35.61438 (22,21)
230.0 /	65.61312 (294, 2)	45.26706 (208, 2)	34.58047 (1,21)
220.0 /	54.71075 (300, 3)	39.29879 (300, 3)	27.12606 (300, 3)
210.0 /	46.39650 (241, 3)	29.19488 (241, 3)	22.54986 (256, 5)
200.0 /	44.31876 (20,21)	34.22297 (20,21)	26.92752 (20,21)
190.0 /	43.63291 (54,21)	33.11237 (54,21)	25.32042 (54,21)
180.0 /	49.29251 (258,24)	32.60439 (258,24)	26.11496 (258,24)
170.0 /	71.34061 (118, 6)	62.39896 (118, 6)	53.47985 (118, 6)
160.0 /	48.13433 (352,20)	34.86072 (262, 1)	27.10992 (262, 1)
150.0 /	46.71394 (334,20)	27.30250 (224,22)	20.96269 (224,22)
140.0 /	54.73307 (20,20)	37.06565 (118, 2)	28.45860 (77, 2)
130.0 /	51.25132 (51, 4)	39.23322 (164, 4)	30.40818 (169,22)
120.0 /	48.58023 (237,24)	31.39734 (183, 5)	23.91838 (112, 2)
110.0 /	50.05703 (237,22)	33.39457 (237,22)	24.07165 (237,22)
100.0 /	59.67376 (18,19)	31.48522 (165, 3)	22.60033 (164,22)
90.0 /	73.01699 (236, 1)	35.40693 (50,20)	29.78359 (50,20)
80.0 /	40.01325 (234, 1)	28.21242 (234, 1)	19.81774 (316,19)
70.0 /	45.83020 (21,19)	30.51801 (170,21)	22.65889 (235,23)
60.0 /	48.42416 (233,23)	32.05744 (172,22)	23.31001 (172,22)
50.0 /	56.21215 (185, 2)	40.63380 (185, 2)	31.16947 (185, 2)
40.0 /	51.70700 (364,19)	34.86259 (364,19)	25.63913 (364,19)
30.0 /	46.59655 (2,21)	28.76385 (316,20)	19.18338 (127,22)
20.0 /	44.73982 (333,19)	31.87103 (37, 6)	21.59707 (37, 6)
10.0 /	40.48408 (33,20)	33.69107 (260,21)	25.92983 (260,21)
360.0 /	45.20739 (265, 5)	30.60486 (265, 5)	24.07721 (265, 5)

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HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 320.20000 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	190.73610 (217, 1)	132.81370 (177, 1)	86.94744 (33, 7)	61.28430C(209, 2)	64.42894C(209, 2)
340.0 /	188.69580 (217, 1)	185.30140 (354, 8)	119.32870 (161, 1)	59.63813C(209, 2)	58.36952C(209, 2)
330.0 /	230.09100 (161, 1)	179.38370 (156, 1)	121.19660 (226, 2)	98.89311C(176, 8)	72.47325 (210, 1)
320.0 /	203.93270C(176, 8)	125.78270 (232, 1)	111.66380 (49, 2)	68.79846 (355, 1)	65.25522 (210, 1)
310.0 /	200.11830 (190, 1)	155.88410 (177, 1)	97.11929 (210, 1)	67.48631 (156, 1)	55.00121 (195, 1)
300.0 /	272.74650 (139, 1)	205.42110C(176, 8)	109.58560 (177, 1)	88.94218 (156, 1)	61.50932 (195, 1)
290.0 /	177.06630 (274, 6)	192.25940 (8, 2)	108.61550 (47, 1)	98.64730 (193, 2)	68.71093 (193, 2)
280.0 /	252.74440 (194, 2)	214.05700 (255, 2)	132.20010C(176, 8)	85.26053 (92, 2)	64.79852 (137, 2)
270.0 /	259.14840 (7, 1)	301.81340 (7, 1)	169.35150 (7, 1)	107.79570 (7, 1)	80.74757 (7, 1)
260.0 /	164.56320 (8, 2)	238.71270 (190, 1)	165.31830 (137, 2)	188.57410 (217, 1)	143.43910C(327, 2)
250.0 /	191.40250 (246, 1)	234.12460 (137, 2)	280.61370 (7, 1)	112.35610 (190, 1)	101.93160 (190, 1)
240.0 /	184.12190 (253, 2)	289.51280 (7, 1)	264.89140 (139, 2)	172.92390 (323, 1)	111.39380 (323, 1)
230.0 /	268.89570 (139, 2)	216.45760 (258, 2)	156.30810 (139, 2)	133.77700 (300, 1)	88.58095 (139, 2)
220.0 /	254.97630 (137, 2)	168.96230C(247, 3)	145.51370 (328, 8)	112.98860 (300, 1)	76.97626 (300, 1)
210.0 /	320.20000 (217, 1)	237.44520 (139, 2)	104.81350 (10, 1)	78.81559 (300, 1)	51.36675 (56, 8)
200.0 /	250.85960 (7, 1)	193.32370 (328, 8)	105.07970 (270, 7)	64.37695 (352, 2)	40.99548 (62, 3)
190.0 /	210.43550 (48, 8)	145.74040 (139, 2)	93.32031 (24, 8)	61.21467 (322, 7)	53.43941 (62, 3)
180.0 /	243.47410 (284, 1)	248.41940 (258, 8)	125.86340 (62, 3)	90.50784 (110, 8)	60.31995 (110, 8)
170.0 /	201.04940 (48, 8)	125.80910 (266, 2)	73.51849 (28, 7)	71.10918 (270, 7)	69.19715 (110, 8)
160.0 /	241.92280 (7, 1)	194.43000 (77, 1)	118.71700 (298, 1)	72.25482 (10, 1)	40.68766 (77, 1)
150.0 /	227.93830 (199, 8)	204.39560C(169, 8)	112.14820C(76, 8)	92.82940 (77, 1)	70.48515 (77, 1)
140.0 /	180.43770C(236, 1)	189.27270 (269, 7)	173.57070 (77, 1)	106.80540 (77, 1)	75.01504 (77, 1)
130.0 /	182.69300 (156, 8)	182.95390 (318, 6)	194.07070 (105, 7)	122.89570 (77, 1)	91.93587C(76, 8)
120.0 /	203.75730C(238, 7)	265.30740 (48, 8)	211.72470C(51, 2)	130.66840 (237, 8)	85.59085 (237, 8)
110.0 /	209.47160 (61, 3)	198.07600C(236, 1)	266.50360 (48, 8)	101.66010 (48, 8)	57.24422 (164, 8)
100.0 /	136.52600 (48, 8)	153.72090 (118, 1)	113.20420 (235, 8)	111.87090 (235, 8)	89.91905 (50, 7)
90.0 /	197.32680 (50, 7)	232.79460 (50, 7)	133.43560C(213, 1)	94.36365C(213, 1)	52.22900C(236, 1)
80.0 /	174.67400C(176, 8)	108.98120 (235, 7)	91.75137C(236, 1)	71.11420 (48, 8)	49.41000C(213, 1)
70.0 /	196.61430 (64, 6)	128.89840 (75, 7)	110.86390 (235, 8)	58.13426 (235, 8)	44.92543 (170, 7)
60.0 /	203.08390 (59, 1)	181.41760 (235, 8)	85.15337 (75, 7)	64.96671 (170, 7)	47.41383 (233, 8)
50.0 /	153.40200 (175, 7)	203.97020 (74, 7)	106.29900 (75, 7)	80.90793 (175, 7)	61.22334 (175, 7)
40.0 /	151.12240 (72, 3)	151.77020 (364, 7)	108.09480C(37, 2)	75.22987C(235, 2)	54.89161C(37, 2)
30.0 /	146.56180 (236, 3)	199.33540 (362, 8)	87.44086 (63, 7)	78.87048C(37, 2)	53.96721C(37, 2)
20.0 /	212.27830 (161, 1)	188.59600 (2, 7)	111.51250 (265, 2)	70.84391 (33, 7)	54.71507 (59, 1)
10.0 /	211.86460 (199, 8)	163.13650 (161, 1)	79.77118 (59, 1)	145.06150 (59, 1)	94.13781 (59, 1)
360.0 /	203.02900 (226, 2)	227.92570 (59, 1)	126.76140 (59, 1)	91.17342 (59, 1)	75.79436 (59, 1)

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HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 320.20000 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	34.09921C(209, 2)	14.71922C(209, 2)	9.16717 (316, 8)
340.0 /	55.35500C(209, 2)	50.30598C(209, 2)	44.69157C(209, 2)
330.0 /	35.28822 (161, 1)	25.73497 (161, 1)	19.34157 (161, 1)
320.0 /	32.75298 (210, 1)	20.72400 (210, 1)	15.45906C(176, 8)
310.0 /	28.19289 (8, 2)	17.90761 (156, 1)	14.06480 (156, 1)
300.0 /	36.68399 (195, 1)	24.18529 (195, 1)	17.43336 (195, 1)
290.0 /	29.24318C(224, 1)	20.85849C(224, 1)	15.44166C(224, 1)
280.0 /	36.35638 (137, 2)	23.95743 (137, 2)	16.55733 (137, 2)
270.0 /	41.71112 (217, 1)	31.57335 (217, 1)	21.10125 (217, 1)
260.0 /	38.98545 (70, 2)	22.29374 (70, 2)	12.90604 (70, 2)
250.0 /	39.11965 (190, 1)	26.80257 (15, 7)	20.01566 (15, 7)
240.0 /	39.65660 (323, 1)	18.52273 (39, 2)	13.76781 (39, 2)
230.0 /	43.44604 (139, 2)	30.79262 (139, 2)	22.89915 (139, 2)
220.0 /	36.88979 (328, 8)	21.24749 (300, 1)	14.48142 (300, 1)
210.0 /	24.33943 (73, 1)	17.85593 (73, 1)	13.75489 (73, 1)
200.0 /	17.16059 (352, 8)	11.74930 (10, 1)	9.43560 (10, 1)
190.0 /	20.21471C(355, 7)	13.75393C(355, 7)	10.12598C(355, 7)
180.0 /	40.00220 (61, 3)	32.47296 (61, 3)	26.16565 (61, 3)
170.0 /	41.62432 (61, 3)	27.87485 (61, 3)	19.04451 (61, 3)
160.0 /	16.30831 (105, 7)	11.62024 (186, 2)	9.03664 (186, 2)
150.0 /	28.70114 (77, 1)	17.10177C(51, 1)	12.65252C(224, 8)
140.0 /	34.85786 (77, 1)	20.72573 (77, 1)	14.60756 (118, 1)
130.0 /	36.52682 (9, 8)	24.12524C(51, 2)	18.34627C(51, 2)
120.0 /	28.95213 (103, 8)	16.10120 (103, 8)	9.99270 (103, 8)
110.0 /	22.88662 (174, 7)	13.24025 (174, 7)	8.91167 (174, 7)
100.0 /	38.41345 (48, 8)	16.09326 (48, 8)	8.87736 (48, 8)
90.0 /	25.14207 (235, 8)	13.18163 (184, 8)	9.93776C(213, 1)
80.0 /	29.84080C(236, 1)	16.47431C(236, 1)	7.50063C(236, 1)
70.0 /	21.79382C(235, 1)	14.60323C(235, 1)	9.78395C(235, 1)
60.0 /	31.61120 (233, 8)	21.04606 (233, 8)	15.30139 (233, 8)
50.0 /	25.23086 (175, 7)	16.64143 (175, 7)	11.89186 (175, 7)
40.0 /	20.15583 (364, 7)	13.11298 (81, 2)	10.03945 (81, 2)
30.0 /	16.72593C(49, 1)	9.97058C(49, 1)	7.59481 (316, 7)
20.0 /	17.99101 (63, 7)	14.01637 (63, 7)	10.79490 (63, 7)
10.0 /	20.21265 (362, 8)	11.65235 (59, 1)	9.16993 (59, 1)
360.0 /	35.22216 (59, 1)	22.24531 (59, 1)	15.20823 (59, 1)

1

2ND HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 300.40720 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	143.63960 (203, 8)	120.77200 (117, 2)	85.68814 (117, 2)	58.73932 (147, 1)	57.87032C(63, 8)
340.0 /	161.75120 (106, 3)	160.19850C(176, 8)	103.79700 (59, 1)	58.43815 (161, 1)	54.18184 (161, 1)
330.0 /	191.57710 (208, 2)	177.11440 (59, 1)	111.48450 (355, 1)	96.49316 (210, 1)	65.41531C(176, 8)
320.0 /	196.10200 (210, 1)	122.31710 (80, 2)	109.73420 (8, 2)	63.18407 (156, 1)	56.42192 (203, 8)
310.0 /	195.94000C(21, 2)	130.25800 (156, 1)	91.47845C(176, 8)	65.56609 (354, 8)	54.03773 (355, 1)
300.0 /	188.66490C(207, 1)	201.93160 (217, 1)	102.99360 (203, 8)	68.28319 (202, 8)	60.13548 (8, 2)
290.0 /	173.10040 (64, 6)	163.92210 (195, 1)	108.36600 (232, 2)	72.94707 (58, 2)	59.90343 (58, 2)
280.0 /	205.30440 (137, 2)	196.28400C(170, 2)	120.07910 (255, 2)	84.28873 (137, 2)	63.13281 (187, 2)
270.0 /	257.75510C(327, 2)	300.40720C(327, 2)	168.63910C(327, 2)	104.63000C(327, 2)	73.85839 (137, 2)
260.0 /	163.39970C(225, 2)	191.63780 (15, 7)	148.47840 (194, 8)	143.48370 (16, 2)	130.48920 (7, 1)
250.0 /	158.88730C(334, 1)	191.72280C(329, 2)	230.79320 (70, 2)	111.74440 (29, 1)	83.43920 (29, 1)
240.0 /	166.62490 (344, 7)	229.15710 (200, 1)	190.74490 (29, 1)	156.01060C(329, 2)	96.24697C(329, 2)
230.0 /	185.08310C(355, 3)	202.06770 (270, 2)	132.35530 (107, 8)	118.89700 (139, 2)	77.67075 (271, 1)
220.0 /	214.88070 (136, 8)	163.68240 (73, 1)	126.42570 (300, 1)	82.33293 (123, 2)	60.60493 (328, 8)
210.0 /	259.94720 (199, 8)	204.78040 (11, 8)	101.27430C(25, 8)	64.57628 (11, 8)	49.86428 (328, 8)
200.0 /	222.19710 (277, 2)	151.79420 (56, 8)	92.42672 (266, 2)	60.36359 (10, 1)	36.66528 (129, 8)
190.0 /	203.87880 (7, 1)	138.34610C(224, 8)	92.52914 (21, 8)	60.30649 (70, 7)	44.44949 (110, 8)
180.0 /	219.64720 (258, 8)	207.75860 (56, 7)	121.78930 (258, 8)	82.19656 (62, 3)	49.17219 (258, 8)
170.0 /	200.06470 (7, 1)	119.14960 (156, 8)	72.15314 (49, 7)	66.23393 (10, 1)	50.39301 (61, 3)
160.0 /	227.08070 (184, 8)	159.89040 (139, 2)	101.77550 (72, 8)	61.53537 (105, 2)	40.62808 (49, 7)
150.0 /	201.23580 (217, 1)	198.44680 (156, 8)	105.88810 (54, 7)	69.63400 (71, 7)	55.19262 (105, 7)
140.0 /	162.37270 (235, 8)	136.94630C(224, 8)	118.94380 (118, 1)	79.34564 (118, 1)	66.21822 (129, 1)
130.0 /	170.30010C(51, 2)	145.14230 (234, 7)	164.79290 (77, 1)	121.98410 (118, 1)	61.07675C(51, 2)
120.0 /	178.33310 (38, 1)	238.94230 (184, 8)	199.19860 (156, 8)	78.41912C(51, 2)	70.12134 (103, 8)
110.0 /	206.16970 (165, 1)	158.04770 (237, 8)	238.50610 (184, 8)	79.93549 (164, 8)	52.51139 (174, 7)
100.0 /	130.75770 (264, 4)	133.45370 (237, 8)	98.35378C(236, 1)	95.52285C(236, 1)	88.56065C(213, 1)
90.0 /	193.56380C(213, 1)	223.54570C(213, 1)	118.56950 (50, 7)	70.81438 (50, 7)	50.41110C(213, 1)
80.0 /	161.12620 (194, 4)	105.48510 (103, 8)	70.17825 (235, 8)	68.51889C(19, 7)	40.01469 (184, 8)
70.0 /	158.58710 (110, 3)	109.75990 (176, 7)	88.34793 (74, 7)	55.44606C(235, 1)	41.63857C(235, 1)
60.0 /	169.41800 (239, 3)	149.59960C(236, 1)	84.95982 (58, 8)	61.08235 (286, 7)	46.73584 (170, 7)
50.0 /	148.24700 (164, 8)	194.76270 (233, 8)	100.21540 (175, 7)	74.44691C(235, 2)	48.60739 (75, 7)
40.0 /	142.94830 (43, 2)	150.28170 (236, 3)	103.43980 (364, 7)	74.90681 (364, 7)	51.35400 (364, 7)
30.0 /	142.72920 (43, 3)	176.73370 (33, 7)	74.69534C(333, 7)	66.76370 (364, 7)	52.24105 (364, 7)
20.0 /	171.06310 (217, 1)	144.02220 (236, 3)	105.15880C(333, 7)	69.56788 (59, 1)	33.32421C(7, 8)
10.0 /	206.70790C(176, 8)	148.00040 (363, 1)	79.13261 (316, 8)	47.79181 (3, 7)	48.73507C(333, 7)
360.0 /	198.33600 (59, 1)	200.87740 (265, 2)	111.13800 (265, 2)	83.83431C(63, 8)	72.96837C(63, 8)

1

2ND HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 300.40720 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	24.49355 (177, 1)	11.98075 (316, 8)	9.05806C(63, 8)
340.0 /	20.91777 (83, 2)	13.96383 (83, 2)	11.04439 (317, 3)
330.0 /	22.15094C(209, 2)	12.82754 (364, 2)	9.26061 (17, 8)
320.0 /	29.74143 (226, 2)	19.35732C(176, 8)	14.65747 (210, 1)
310.0 /	27.47760 (49, 2)	15.80183 (194, 1)	12.01578 (194, 1)
300.0 /	28.70501C(334, 1)	18.85695C(334, 1)	13.90154C(334, 1)
290.0 /	24.65944 (160, 8)	18.00855 (160, 8)	12.35616 (160, 8)
280.0 /	35.33899 (255, 2)	20.38091C(18, 8)	15.31680C(18, 8)
270.0 /	37.31395 (39, 1)	23.51315 (39, 1)	18.67633C(327, 2)
260.0 /	38.45747 (122, 8)	19.17459C(262, 2)	12.66556 (15, 2)
250.0 /	38.59895 (15, 7)	25.45525 (190, 1)	17.74529 (190, 1)
240.0 /	28.48887C(54, 1)	17.80318 (262, 8)	12.53658 (262, 8)
230.0 /	33.46463 (271, 1)	19.39474 (299, 2)	13.24992 (67, 7)
220.0 /	31.94069 (300, 1)	17.29695 (328, 8)	10.47721 (57, 1)
210.0 /	22.51557 (266, 2)	13.99860 (266, 2)	9.59686 (266, 2)
200.0 /	15.13302 (10, 1)	11.54885 (299, 7)	9.18029 (299, 7)
190.0 /	15.76027 (222, 8)	11.34688 (222, 8)	9.04447 (222, 8)
180.0 /	25.03653 (72, 8)	17.61131 (72, 8)	12.61860 (72, 8)
170.0 /	26.18195 (118, 2)	22.26738 (118, 2)	18.75310 (118, 2)
160.0 /	16.10330 (190, 8)	11.62024 (262, 1)	9.03664 (262, 1)
150.0 /	24.43275C(51, 1)	16.09509C(224, 8)	11.25654 (269, 7)
140.0 /	24.16610 (118, 1)	18.77821 (118, 1)	12.68205 (77, 1)
130.0 /	34.00078 (156, 8)	23.64379 (156, 8)	17.48647 (156, 8)
120.0 /	21.63443 (237, 8)	11.54185 (267, 7)	7.98633 (267, 7)
110.0 /	16.73954 (237, 8)	11.13166 (237, 8)	8.02389 (237, 8)
100.0 /	23.35332C(19, 7)	12.99919 (164, 8)	8.55242 (165, 1)
90.0 /	24.33955C(236, 1)	11.81921C(213, 1)	9.92786 (50, 7)
80.0 /	23.61491 (235, 8)	10.17053 (235, 8)	6.64337 (214, 1)
70.0 /	21.39640 (235, 8)	12.01718 (235, 8)	8.32982 (235, 8)
60.0 /	20.14928 (213, 8)	14.32839 (213, 8)	10.90737 (213, 8)
50.0 /	21.10472C(235, 2)	13.73545 (286, 7)	10.38982C(185, 1)
40.0 /	18.69992 (81, 2)	12.39478 (364, 7)	8.74827 (364, 7)
30.0 /	15.53218 (2, 7)	9.58795 (316, 7)	6.39446 (127, 8)
20.0 /	15.64384C(37, 2)	11.85637C(333, 7)	9.41271C(333, 7)
10.0 /	20.19521 (59, 1)	11.23036 (260, 7)	8.64328 (260, 7)
360.0 /	19.75735 (362, 8)	13.48812 (362, 8)	9.14460 (362, 8)

1

HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 188.33420 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	99.39856 (147, 1)	79.33292C(117, 1)	59.19244C(117, 1)	37.51355C(117, 1)	35.64893C(209, 1)
340.0 /	105.56690 (106, 1)	107.79100C(240, 1)	66.44247C(177, 1)	35.96683C(177, 1)	30.47225C(209, 1)
330.0 /	129.00540C(200, 1)	134.58910C(21, 1)	74.01018C(210, 1)	57.62231C(210, 1)	45.19851C(210, 1)
320.0 /	147.40030C(210, 1)	88.15828C(263, 1)	70.02235 (264, 1)	49.35734C(21, 1)	45.79736C(210, 1)
310.0 /	161.39470C(21, 1)	113.37590C(177, 1)	66.24181C(21, 1)	52.51680C(263, 1)	36.66196C(334, 1)
300.0 /	143.37140C(208, 1)	130.75040C(210, 1)	74.52539C(21, 1)	57.45768C(21, 1)	39.62568 (195, 1)
290.0 /	130.62260C(224, 1)	116.49240C(8, 1)	76.05938 (195, 1)	61.98173C(263, 1)	41.80207 (193, 1)
280.0 /	135.37750C(137, 1)	152.55220C(224, 1)	74.59842C(210, 1)	65.38223C(200, 1)	42.61788C(75, 1)
270.0 /	143.47460C(327, 1)	165.35640C(327, 1)	93.06944C(18, 1)	75.43142C(18, 1)	52.42262C(18, 1)
260.0 /	113.97540C(225, 1)	169.22480C(190, 1)	116.83540C(224, 1)	79.50999 (217, 1)	86.44858C(327, 1)
250.0 /	158.92830C(334, 1)	151.79700C(137, 1)	167.46140C(200, 1)	103.33750 (29, 1)	90.69679 (29, 1)
240.0 /	132.00940 (29, 1)	176.72150C(200, 1)	126.92790 (124, 1)	106.24100 (323, 1)	73.29335 (323, 1)
230.0 /	143.80180 (299, 1)	157.23000C(270, 1)	90.48462 (45, 1)	85.76231 (300, 1)	54.39219 (271, 1)
220.0 /	181.66490C(137, 1)	96.63177 (29, 1)	96.11606 (300, 1)	70.19923 (300, 1)	50.14230 (300, 1)
210.0 /	188.33420C(73, 1)	101.55700 (139, 1)	67.28950C(10, 1)	51.03683 (300, 1)	35.21003 (300, 1)
200.0 /	135.42990C(327, 1)	92.74478C(10, 1)	49.48744 (245, 3)	42.19264 (352, 1)	22.97963C(70, 3)
190.0 /	147.62470C(200, 1)	83.39862 (24, 3)	46.26457C(21, 3)	32.76634C(70, 3)	28.57641C(62, 1)
180.0 /	142.88910C(284, 1)	108.01460C(62, 1)	76.88827C(62, 1)	44.39912C(62, 1)	36.58120C(62, 1)
170.0 /	151.93690C(10, 1)	91.31783C(269, 3)	57.93737 (352, 1)	41.35001 (72, 3)	39.37281C(62, 1)
160.0 /	147.56360C(73, 1)	127.39620C(77, 1)	59.22952C(62, 1)	36.12741C(10, 1)	24.86356C(62, 1)
150.0 /	145.71350 (199, 3)	110.58560C(51, 1)	62.65253C(76, 3)	43.91836C(129, 1)	34.94317C(51, 1)
140.0 /	109.03460 (235, 3)	110.66820C(269, 3)	74.68571C(77, 1)	50.60662C(269, 3)	48.41711C(51, 1)
130.0 /	135.96420C(51, 1)	111.04890C(318, 3)	137.30260C(51, 1)	52.66960C(77, 1)	58.36457C(76, 3)
120.0 /	119.19420C(238, 3)	101.44500 (184, 3)	131.05500 (237, 3)	74.04251 (237, 3)	45.90419 (237, 3)
110.0 /	149.17670C(334, 1)	99.92400 (237, 3)	102.99280 (184, 3)	45.96445 (164, 3)	30.90814 (164, 3)
100.0 /	97.08604C(239, 3)	70.33736 (237, 3)	79.64771 (235, 3)	52.01000 (235, 3)	45.69255C(50, 3)
90.0 /	127.47890C(213, 1)	121.93560C(50, 3)	66.71782C(213, 1)	47.18182C(213, 1)	26.11450C(236, 1)
80.0 /	92.75471C(214, 1)	84.94395 (235, 3)	59.99580C(235, 1)	38.93908C(19, 3)	26.04331 (235, 3)
70.0 /	111.75980 (239, 2)	87.11945C(185, 1)	68.04852C(74, 3)	61.81220C(235, 1)	29.83557C(235, 1)
60.0 /	110.56920 (264, 3)	117.05160C(235, 1)	62.85030C(185, 1)	45.72987C(235, 1)	30.97823C(235, 1)
50.0 /	95.34938C(185, 1)	146.12860C(74, 3)	59.81385C(235, 1)	41.61705C(235, 1)	27.18920 (175, 3)
40.0 /	86.62280 (123, 2)	75.22600C(286, 3)	66.10605C(37, 1)	37.61493C(235, 1)	31.31950 (58, 3)
30.0 /	88.13721C(187, 2)	94.87714 (362, 3)	50.55339C(333, 3)	53.45477C(37, 1)	37.42279C(37, 1)
20.0 /	91.07882C(161, 1)	81.75316C(63, 3)	61.07680C(333, 3)	33.70535 (59, 1)	26.61351 (59, 1)
10.0 /	134.43900C(176, 3)	94.09122C(177, 1)	58.93864C(117, 1)	66.21682 (59, 1)	41.52962 (59, 1)
360.0 /	105.61890C(226, 1)	100.45080C(240, 1)	57.59372 (59, 1)	48.38525 (59, 1)	40.12542 (59, 1)

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HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 188.33420 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	1000.0	1500.0	RANGE (METERS) 2000.0
350.0 /	18.58550C(209, 1)	8.84873C(209, 1)	5.60566C(117, 1)
340.0 /	24.77336C(209, 1)	21.83186C(209, 1)	19.22680C(209, 1)
330.0 /	15.12352C(161, 1)	11.02927C(161, 1)	8.28924C(161, 1)
320.0 /	24.26187C(210, 1)	14.74693C(210, 1)	9.90068C(210, 1)
310.0 /	20.35736C(210, 1)	11.85318C(21, 1)	9.44398C(21, 1)
300.0 /	24.11843C(334, 1)	16.21144C(334, 1)	11.98238C(334, 1)
290.0 /	19.32298C(224, 1)	13.79228C(224, 1)	10.25481C(224, 1)
280.0 /	21.58327C(137, 1)	14.18648C(137, 1)	9.80975C(137, 1)
270.0 /	21.33124C(73, 1)	14.04250C(73, 1)	9.91626C(327, 1)
260.0 /	20.81524 (70, 1)	12.75087 (70, 1)	8.94936 (15, 1)
250.0 /	33.97961 (29, 1)	16.58129 (29, 1)	10.26646 (295, 1)
240.0 /	29.36059 (323, 1)	14.48614 (323, 1)	9.35992C(270, 1)
230.0 /	20.90396 (299, 1)	12.28372 (299, 1)	8.60067 (139, 1)
220.0 /	19.79500 (300, 1)	12.43315 (300, 1)	8.07043 (300, 1)
210.0 /	12.16971C(73, 1)	8.92797C(73, 1)	6.87745C(73, 1)
200.0 /	9.44554 (352, 3)	5.87465C(10, 1)	4.71780C(10, 1)
190.0 /	11.98530 (352, 1)	7.90323 (352, 1)	5.59302 (352, 1)
180.0 /	16.18916 (61, 1)	12.93236 (61, 1)	10.33212 (61, 1)
170.0 /	16.11913 (61, 1)	10.60954 (61, 1)	7.20557 (61, 1)
160.0 /	11.30502C(269, 3)	6.09173C(269, 3)	4.53171C(269, 3)
150.0 /	12.34082C(129, 1)	8.55088C(51, 1)	5.62831C(269, 3)
140.0 /	14.93908C(77, 1)	8.88245C(77, 1)	6.10503 (118, 1)
130.0 /	19.52945C(183, 1)	12.06262C(51, 1)	9.17313C(51, 1)
120.0 /	14.40882C(157, 1)	9.39472C(112, 1)	6.88429C(112, 1)
110.0 /	10.00501C(174, 3)	6.20748 (237, 3)	4.41396 (237, 3)
100.0 /	14.40518 (48, 3)	6.55044 (164, 3)	4.00765C(6, 3)
90.0 /	12.16977C(236, 1)	5.90960C(213, 1)	4.96888C(213, 1)
80.0 /	15.10606 (235, 3)	8.23715C(236, 1)	3.75031C(236, 1)
70.0 /	11.87604 (235, 3)	7.30909C(235, 1)	4.96650C(19, 3)
60.0 /	11.85420 (233, 3)	7.89227 (233, 3)	5.73802 (233, 3)
50.0 /	11.44778 (175, 3)	7.50442 (175, 3)	5.34679 (175, 3)
40.0 /	9.03273C(37, 1)	5.81285C(37, 1)	4.27021C(37, 1)
30.0 /	8.36296C(49, 1)	5.34929 (3, 3)	3.88411 (3, 3)
20.0 /	11.94501C(37, 1)	7.61490C(37, 1)	5.02824C(37, 1)
10.0 /	10.23081 (59, 1)	6.28210 (59, 1)	4.89842 (59, 1)
360.0 /	14.26434 (59, 1)	8.53010 (59, 1)	5.75208 (59, 1)

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2ND HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 169.33960 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	100.0	200.0	RANGE (METERS) 300.0	400.0	500.0
350.0 /	98.86949C(74, 1)	79.13890C(177, 1)	48.17165C(177, 1)	36.21786C(209, 1)	30.94786C(117, 1)
340.0 /	101.02600C(49, 1)	101.31590C(210, 1)	55.98748C(240, 1)	35.45565 (264, 1)	24.93008C(177, 1)
330.0 /	118.86210 (7, 1)	94.67326 (156, 1)	66.26912C(226, 1)	42.97585C(240, 1)	36.91958C(240, 1)
320.0 /	111.04800 (232, 1)	83.89156 (232, 1)	64.00566C(8, 1)	44.67414C(210, 1)	31.38818 (355, 1)
310.0 /	140.09860C(190, 1)	101.11130C(21, 1)	63.90894C(210, 1)	48.19117C(21, 1)	35.82217 (232, 1)
300.0 /	140.77730C(334, 1)	112.88400 (232, 1)	63.20938C(177, 1)	49.81050C(263, 1)	38.43870C(334, 1)
290.0 /	122.66840C(263, 1)	115.96160C(225, 1)	74.93501C(20, 1)	54.77946 (193, 1)	40.65498C(21, 1)
280.0 /	115.70480 (194, 3)	118.92280 (29, 1)	73.94763 (255, 1)	56.85461C(21, 1)	39.45332C(137, 1)
270.0 /	134.38750C(268, 1)	145.73960C(268, 1)	91.76822C(327, 1)	61.22278C(327, 1)	48.38188C(328, 1)
260.0 /	111.25800 (353, 1)	134.27400C(261, 1)	111.13560 (29, 1)	72.10661C(20, 1)	57.90698C(73, 1)
250.0 /	124.14460C(246, 1)	118.89670C(329, 1)	166.67290 (7, 1)	94.85439 (353, 1)	68.88295 (353, 1)
240.0 /	124.07810C(42, 1)	169.33960 (7, 1)	126.86180 (29, 1)	93.06749C(329, 1)	62.99593C(329, 1)
230.0 /	120.61520C(224, 1)	122.64310 (257, 1)	84.47356 (300, 1)	66.66810 (45, 1)	44.19899 (45, 1)
220.0 /	111.02200 (158, 1)	84.72252 (323, 1)	70.66994 (270, 3)	43.01673 (271, 1)	33.31610 (299, 1)
210.0 /	152.17590 (199, 3)	95.99908 (299, 1)	53.37898 (258, 1)	34.85252 (354, 1)	24.35205 (352, 3)
200.0 /	130.50580 (277, 1)	87.83195 (300, 1)	47.72169 (72, 3)	34.85719 (266, 1)	22.91033 (352, 3)
190.0 /	143.34340C(77, 1)	81.95946 (352, 1)	45.57028C(10, 1)	32.29249C(355, 3)	24.27895 (352, 1)
180.0 /	139.00250 (7, 1)	105.02020 (270, 3)	50.53230 (298, 1)	38.34641 (110, 3)	23.34186 (110, 3)
170.0 /	148.64280 (7, 1)	73.20757C(10, 1)	47.11614C(77, 1)	35.67265C(25, 3)	30.38236 (110, 3)
160.0 /	137.09760C(200, 1)	78.28473C(269, 3)	58.18851 (298, 1)	34.32428C(51, 1)	23.15951C(269, 3)
150.0 /	111.06640C(21, 3)	99.56534C(42, 1)	52.98656C(54, 3)	39.87503C(77, 1)	32.78009C(129, 1)
140.0 /	95.46922C(71, 3)	107.56460C(318, 3)	73.02203C(129, 1)	50.08153C(51, 1)	47.33980C(129, 1)
130.0 /	97.59074 (156, 3)	105.97930C(51, 1)	125.76500C(129, 1)	51.80308 (10, 3)	38.71931C(183, 1)
120.0 /	114.70440 (67, 1)	99.54564 (48, 3)	105.87880C(51, 1)	61.48296C(157, 1)	42.83313C(157, 1)
110.0 /	125.46110C(42, 1)	99.03822C(236, 1)	99.97585 (48, 3)	38.12290 (48, 3)	26.87815 (237, 3)
100.0 /	75.18194C(21, 1)	64.08205C(8, 2)	54.47024C(235, 1)	49.10988C(55, 3)	44.28033C(213, 1)
90.0 /	103.47110C(50, 3)	115.89930C(213, 1)	61.16885C(50, 3)	39.57603 (235, 3)	25.52746 (235, 3)
80.0 /	86.34567C(176, 3)	83.39967C(235, 1)	47.08229 (235, 3)	37.35075C(235, 1)	24.70500C(213, 1)
70.0 /	86.40727C(235, 1)	76.31250C(75, 3)	56.56212 (235, 3)	35.37020 (235, 3)	23.82883 (235, 3)
60.0 /	97.99538C(364, 3)	100.73060 (235, 3)	51.55471C(75, 3)	36.04481C(286, 3)	28.82158C(170, 3)
50.0 /	91.03976C(74, 3)	94.37859C(75, 3)	58.79774C(75, 3)	35.69505 (175, 3)	27.06670C(74, 3)
40.0 /	83.65777C(117, 1)	74.55219 (47, 3)	49.64679C(364, 3)	35.90064C(37, 1)	30.66074C(37, 1)
30.0 /	83.78705 (277, 1)	74.16006 (33, 3)	47.44147C(37, 1)	32.20569C(364, 3)	23.26011C(364, 3)
20.0 /	89.95399 (199, 3)	72.01041C(236, 1)	50.57055 (362, 3)	30.44636 (33, 3)	19.05336C(37, 1)
10.0 /	111.39800C(210, 1)	77.54203C(63, 3)	50.89262 (59, 1)	28.06656C(41, 1)	30.77178C(63, 3)
360.0 /	99.48364 (80, 1)	87.42714C(333, 3)	57.12344C(63, 3)	42.64303C(63, 3)	37.98235C(63, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 169.33960 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	1000.0	1500.0	RANGE (METERS) 2000.0
350.0 /	12.07185C(117, 1)	7.40633C(117, 1)	5.03936C(209, 1)
340.0 /	14.74115C(177, 1)	8.30505C(177, 1)	5.77859C(317, 1)
330.0 /	12.93311C(240, 1)	6.81839C(364, 1)	4.36676C(364, 1)
320.0 /	16.54868C(240, 1)	10.15371C(240, 1)	6.89654 (355, 1)
310.0 /	15.62886C(21, 1)	9.20562 (156, 1)	6.82850 (156, 1)
300.0 /	22.44678 (195, 1)	15.14015 (195, 1)	11.10240 (195, 1)
290.0 /	16.68842C(171, 1)	9.88438 (335, 3)	6.96232 (335, 3)
280.0 /	16.96525 (196, 1)	10.25849C(199, 1)	7.65840C(18, 3)
270.0 /	16.75041C(327, 1)	12.57594C(327, 1)	9.18041C(73, 1)
260.0 /	18.83919 (7, 1)	11.40227 (15, 1)	8.72703 (353, 1)
250.0 /	25.04749 (295, 1)	14.96170 (295, 1)	9.02037 (29, 1)
240.0 /	19.07567C(270, 1)	12.66242C(270, 1)	8.30078 (323, 1)
230.0 /	19.72145 (45, 1)	11.82479 (45, 1)	8.11220 (299, 1)
220.0 /	15.53581 (271, 1)	7.96169 (271, 1)	4.98070C(318, 3)
210.0 /	11.08348 (300, 1)	6.08642 (300, 1)	3.68858 (266, 1)
200.0 /	9.22999 (258, 1)	5.75654 (352, 3)	4.13906 (354, 1)
190.0 /	10.23370C(355, 3)	6.87863C(355, 3)	5.06306C(355, 3)
180.0 /	12.93720 (72, 3)	8.34010 (72, 3)	5.70420 (72, 3)
170.0 /	9.89391 (118, 1)	8.35403 (118, 1)	7.03285 (118, 1)
160.0 /	7.81886C(37, 1)	5.69802C(37, 1)	4.05062C(37, 1)
150.0 /	12.30049C(77, 1)	7.57442C(269, 3)	5.50776C(224, 3)
140.0 /	12.40539 (10, 3)	8.26276 (118, 1)	5.53300C(76, 3)
130.0 /	16.32590C(51, 1)	11.22490C(183, 1)	7.70624C(183, 1)
120.0 /	14.05550C(112, 1)	7.58117C(157, 1)	4.14418 (215, 1)
110.0 /	9.56766 (237, 3)	5.71716C(174, 3)	3.83416C(174, 3)
100.0 /	11.79152 (164, 3)	6.03498 (48, 3)	3.86679 (164, 3)
90.0 /	12.13725C(55, 3)	5.90115C(50, 3)	4.96393C(50, 3)
80.0 /	14.92040C(236, 1)	6.52452 (235, 3)	3.51038C(214, 1)
70.0 /	10.99119C(235, 1)	6.94863 (235, 3)	4.89335C(235, 1)
60.0 /	10.93000C(74, 3)	6.27578C(74, 3)	4.44275C(74, 3)
50.0 /	10.55236C(235, 1)	6.94665C(185, 1)	5.27728C(185, 1)
40.0 /	8.63822C(364, 3)	5.31205C(364, 3)	3.76480 (81, 1)
30.0 /	8.08717 (3, 3)	4.98529C(49, 1)	3.25492C(316, 3)
20.0 /	7.75870C(63, 3)	6.01436C(63, 3)	4.70637C(333, 3)
10.0 /	7.57976 (362, 3)	4.21138 (260, 3)	3.24123 (260, 3)
360.0 /	8.18373C(63, 3)	5.05805 (362, 3)	3.42922 (362, 3)

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HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 91.69759 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	48.39593C(63, 1)	39.06367 (264, 1)	22.48232C(209, 1)	18.70980C(209, 1)	15.20435C(209, 1)
340.0 /	67.01993 (39, 1)	54.85969C(210, 1)	27.12523 (231, 1)	17.68575 (231, 1)	14.86565C(209, 1)
330.0 /	67.65012C(7, 1)	48.17402 (335, 1)	29.74115C(210, 1)	23.33130C(210, 1)	19.31506C(210, 1)
320.0 /	57.21899C(210, 1)	40.68171 (202, 1)	28.48491C(263, 1)	19.55416C(210, 1)	18.25987C(210, 1)
310.0 /	63.96488C(21, 1)	40.37643 (194, 1)	32.54610C(210, 1)	22.85541C(263, 1)	16.36072C(210, 1)
300.0 /	65.50229C(208, 1)	51.18716C(210, 1)	30.52750C(210, 1)	24.97085C(263, 1)	16.70435C(263, 1)
290.0 /	69.76055 (231, 1)	55.82570C(334, 1)	33.27782C(260, 1)	27.54083C(193, 1)	21.51970 (335, 1)
280.0 /	79.34752 (194, 1)	55.29297 (194, 1)	33.38335 (194, 1)	27.52979 (194, 1)	22.23176C(18, 1)
270.0 /	64.64394 (217, 1)	72.59708 (217, 1)	43.93757C(18, 1)	37.77934C(18, 1)	29.50561C(18, 1)
260.0 /	62.58829 (15, 1)	61.67064C(190, 1)	47.85331 (29, 1)	35.91069 (217, 1)	29.51759C(327, 1)
250.0 /	59.42690 (15, 1)	68.91042C(137, 1)	67.80962C(329, 1)	44.51305 (29, 1)	35.96314 (29, 1)
240.0 /	67.55561C(193, 1)	72.70988C(329, 1)	61.23341C(329, 1)	49.24990C(329, 1)	34.20864C(329, 1)
230.0 /	76.62355C(1, 1)	79.44928 (280, 1)	48.93694 (266, 1)	40.20275 (300, 1)	24.45443 (271, 1)
220.0 /	74.44787C(137, 1)	60.23158C(247, 1)	43.44034 (300, 1)	30.95119 (300, 1)	22.09281 (300, 1)
210.0 /	91.69759C(71, 1)	59.15766 (67, 1)	27.98202 (258, 1)	21.64420 (300, 1)	14.25828 (300, 1)
200.0 /	75.33303C(71, 1)	43.00858C(10, 1)	30.07622 (258, 1)	26.34702 (352, 1)	15.14702 (352, 1)
190.0 /	73.90690C(259, 1)	54.29836 (352, 1)	24.62074 (298, 1)	17.26557 (352, 1)	14.82182 (352, 1)
180.0 /	62.90419C(7, 1)	58.06416 (258, 1)	31.48255C(62, 1)	16.96309C(62, 1)	13.08327C(62, 1)
170.0 /	65.12323C(7, 1)	43.72426C(10, 1)	25.56610 (352, 1)	15.26425 (53, 1)	13.98698C(62, 1)
160.0 /	72.24493C(73, 1)	52.21701C(77, 1)	27.16437 (26, 1)	18.36707C(10, 1)	10.18022C(10, 1)
150.0 /	71.49623C(71, 1)	48.55779C(51, 1)	25.84501 (26, 1)	17.07821 (26, 1)	11.07552C(10, 1)
140.0 /	82.45577C(71, 1)	46.99102C(51, 1)	30.95085C(77, 1)	18.28992C(51, 1)	16.44308C(129, 1)
130.0 /	59.19161C(235, 1)	82.41225C(51, 1)	51.14152C(51, 1)	23.03731C(237, 1)	19.46046C(76, 1)
120.0 /	54.30190C(234, 1)	39.27891C(259, 1)	62.09447C(237, 1)	34.73682C(237, 1)	21.53699C(237, 1)
110.0 /	57.76466C(42, 1)	61.81020C(236, 1)	38.30332C(184, 1)	19.24109C(237, 1)	13.60962 (181, 1)
100.0 /	52.62036C(239, 1)	38.16836C(237, 1)	52.66982C(235, 1)	29.01076C(235, 1)	20.39494C(213, 1)
90.0 /	59.05254C(213, 1)	56.69123C(213, 1)	37.47489C(235, 1)	26.23297C(235, 1)	14.75285C(235, 1)
80.0 /	62.46984C(235, 1)	65.79477C(235, 1)	41.18293C(235, 1)	27.05903C(235, 1)	18.29034C(235, 1)
70.0 /	61.66952C(235, 1)	41.17808C(185, 1)	40.11689C(235, 1)	35.96560C(235, 1)	20.57774C(235, 1)
60.0 /	59.67509 (231, 1)	86.12827C(235, 1)	36.53337C(235, 1)	25.53597C(235, 1)	14.94778C(235, 1)
50.0 /	48.43233C(209, 1)	49.82657C(74, 1)	26.39739C(235, 1)	17.94116C(175, 1)	13.47276C(175, 1)
40.0 /	64.06561 (266, 1)	33.05769 (58, 1)	19.88034C(37, 1)	13.81684C(235, 1)	11.72729 (58, 1)
30.0 /	45.59272 (143, 1)	35.35517C(175, 1)	21.33911C(333, 1)	15.27286C(37, 1)	10.69223C(37, 1)
20.0 /	53.61417C(199, 1)	44.47427C(333, 1)	23.70039C(333, 1)	11.23512 (59, 1)	8.87117 (59, 1)
10.0 /	72.07280C(199, 1)	44.42121 (363, 1)	19.18207C(63, 1)	22.07227 (59, 1)	13.84321 (59, 1)
360.0 /	56.49156 (194, 1)	46.37045C(364, 1)	26.31060C(333, 1)	16.12842 (59, 1)	13.37514 (59, 1)

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HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 91.69759 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	1000.0	1500.0	RANGE (METERS) 2000.0
350.0 /	7.44032C(209, 1)	3.66391C(209, 1)	2.17905C(209, 1)
340.0 /	9.67153C(209, 1)	7.92421C(209, 1)	6.83819C(209, 1)
330.0 /	5.00899C(209, 1)	3.35687C(161, 1)	2.52285C(161, 1)
320.0 /	9.10965C(210, 1)	5.30644C(210, 1)	3.50021C(210, 1)
310.0 /	7.22775C(210, 1)	4.08219C(263, 1)	2.98231C(21, 1)
300.0 /	8.18645C(334, 1)	5.33957C(334, 1)	3.88120C(334, 1)
290.0 /	8.35474 (335, 1)	5.19468 (335, 1)	3.55899 (335, 1)
280.0 /	8.06451C(18, 1)	4.90229C(18, 1)	3.58501 (194, 1)
270.0 /	8.38076C(73, 1)	5.63561C(73, 1)	3.76017 (217, 1)
260.0 /	7.70448 (29, 1)	4.62470C(70, 1)	3.10790 (15, 1)
250.0 /	12.35837 (29, 1)	5.91833 (29, 1)	3.57441 (295, 1)
240.0 /	13.08242 (323, 1)	6.68735 (323, 1)	4.18461C(270, 1)
230.0 /	8.41965 (271, 1)	4.70271 (299, 1)	3.06388 (299, 1)
220.0 /	8.22240 (300, 1)	4.99310 (300, 1)	3.23108 (300, 1)
210.0 /	4.10468 (300, 1)	2.81936C(73, 1)	2.17183C(73, 1)
200.0 /	5.67694 (352, 1)	3.21659 (352, 1)	2.23215 (352, 1)
190.0 /	5.01619 (352, 1)	2.92778 (352, 1)	1.94248 (352, 1)
180.0 /	5.91154C(61, 1)	4.70732C(61, 1)	3.75856C(61, 1)
170.0 /	5.86205C(61, 1)	3.85803C(61, 1)	2.62021C(61, 1)
160.0 /	3.68193 (26, 1)	2.24090C(37, 1)	1.52648C(37, 1)
150.0 /	4.11564C(77, 1)	2.65825C(224, 1)	2.02922C(224, 1)
140.0 /	5.00052C(10, 1)	2.88248 (118, 1)	2.10184 (118, 1)
130.0 /	7.01978C(237, 1)	4.59215C(237, 1)	3.12950C(237, 1)
120.0 /	5.20666 (181, 1)	3.03503 (181, 1)	2.15919C(112, 1)
110.0 /	4.52997C(237, 1)	2.87920C(237, 1)	2.02921C(237, 1)
100.0 /	4.80173 (48, 1)	2.20188 (164, 1)	1.29766 (164, 1)
90.0 /	6.39166C(235, 1)	3.50228C(213, 1)	2.62923C(213, 1)
80.0 /	8.25879C(235, 1)	3.76045C(235, 1)	2.09046C(235, 1)
70.0 /	8.54290C(235, 1)	5.25327C(235, 1)	3.56284C(235, 1)
60.0 /	5.88460C(233, 1)	3.86018C(233, 1)	2.77593C(233, 1)
50.0 /	5.51666C(175, 1)	3.54375C(175, 1)	2.50017C(175, 1)
40.0 /	3.59128 (81, 1)	2.33722 (81, 1)	1.72573 (81, 1)
30.0 /	2.93728 (47, 1)	1.85307 (3, 1)	1.32859 (3, 1)
20.0 /	3.46293C(63, 1)	2.51990C(63, 1)	1.88847C(63, 1)
10.0 /	3.41027 (59, 1)	2.09403 (59, 1)	1.63281 (59, 1)
360.0 /	4.75478 (59, 1)	2.84337 (59, 1)	1.91736 (59, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 85.98340 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	44.84595 (147, 1)	36.71864C(209, 1)	19.16833 (231, 1)	14.58853 (231, 1)	9.73183 (264, 1)
340.0 /	57.89289 (217, 1)	38.36626C(364, 1)	24.88857C(210, 1)	16.55574C(209, 1)	11.59087 (231, 1)
330.0 /	66.02248C(200, 1)	45.35879C(263, 1)	28.64227C(355, 1)	17.49275C(355, 1)	12.10104 (231, 1)
320.0 /	54.41016 (29, 1)	40.28888C(263, 1)	27.79893 (202, 1)	19.23054C(263, 1)	13.95030C(355, 1)
310.0 /	61.10569C(190, 1)	36.35353C(21, 1)	31.00381 (335, 1)	21.18748C(210, 1)	14.97706C(263, 1)
300.0 /	61.85026 (195, 1)	43.79132 (361, 1)	29.88182C(203, 1)	23.48447 (255, 1)	16.40788 (335, 1)
290.0 /	62.30477C(364, 1)	49.40382 (361, 1)	30.95710 (361, 1)	26.56344C(263, 1)	20.28682C(193, 1)
280.0 /	67.59644C(221, 1)	50.60024C(226, 1)	32.19399 (331, 1)	26.32962C(18, 1)	19.87975 (331, 1)
270.0 /	61.39791C(260, 1)	63.12436C(18, 1)	37.88693 (255, 1)	26.52444 (331, 1)	21.07504 (194, 1)
260.0 /	59.82942C(259, 1)	59.39636 (15, 1)	46.70022 (194, 1)	33.88907 (29, 1)	28.39292 (217, 1)
250.0 /	59.01280 (295, 1)	65.21504C(329, 1)	67.25993C(262, 1)	32.92802 (122, 1)	23.50718 (295, 1)
240.0 /	58.62211C(42, 1)	72.42194C(262, 1)	60.37518 (29, 1)	47.57399 (323, 1)	33.55400 (323, 1)
230.0 /	75.54623 (299, 1)	75.68315 (266, 1)	43.33737 (300, 1)	31.21796 (123, 1)	21.37049 (323, 1)
220.0 /	73.41995C(199, 1)	51.69366 (266, 1)	35.18604 (38, 1)	23.53585 (299, 1)	18.90851 (258, 1)
210.0 /	85.98340C(73, 1)	57.06486 (38, 1)	23.55725C(10, 1)	19.15447 (352, 1)	14.11507 (352, 1)
200.0 /	75.15395C(50, 1)	40.17711 (300, 1)	26.28175 (352, 1)	16.23462 (258, 1)	11.68675 (258, 1)
190.0 /	68.95119C(73, 1)	40.01068 (299, 1)	24.33439 (352, 1)	14.36874 (26, 1)	11.57040 (298, 1)
180.0 /	56.36465C(284, 1)	55.51088C(62, 1)	28.28483 (258, 1)	15.89049 (298, 1)	11.58506 (352, 1)
170.0 /	63.75424C(70, 1)	35.89710 (26, 1)	23.20599C(10, 1)	15.01874 (298, 1)	10.51162 (298, 1)
160.0 /	70.75168C(50, 1)	38.73607 (11, 1)	26.50975C(62, 1)	14.76173C(105, 1)	10.12709C(62, 1)
150.0 /	69.27280C(199, 1)	46.72850C(61, 1)	23.36050 (53, 1)	15.03981 (118, 1)	11.02649C(77, 1)
140.0 /	63.62103C(235, 1)	46.10682C(269, 1)	30.53477C(10, 1)	17.88990C(9, 1)	16.06408C(51, 1)
130.0 /	52.02183C(288, 1)	53.36732 (181, 1)	41.16445C(129, 1)	22.06926 (182, 1)	15.55246C(237, 1)
120.0 /	48.01963 (67, 1)	38.39062C(184, 1)	46.72711C(51, 1)	23.18762C(51, 1)	14.98213 (181, 1)
110.0 /	50.88369C(334, 1)	57.97081C(235, 1)	33.32528 (48, 1)	18.02078 (181, 1)	13.40355C(237, 1)
100.0 /	47.25291C(21, 1)	35.86565C(185, 1)	34.93646C(185, 1)	21.06579C(236, 1)	13.74307C(50, 1)
90.0 /	41.91322C(355, 1)	43.49765C(235, 1)	31.49350C(213, 1)	21.84546C(213, 1)	14.09035C(213, 1)
80.0 /	46.43467C(21, 1)	42.64533C(185, 1)	22.60181C(185, 1)	13.85297C(19, 1)	14.91628C(213, 1)
70.0 /	61.22703C(265, 1)	40.80121C(235, 1)	28.64175C(213, 1)	14.22315 (81, 1)	9.81472C(170, 1)
60.0 /	55.06765C(364, 1)	38.85443C(213, 1)	23.61953C(185, 1)	13.62458C(175, 1)	11.50703C(170, 1)
50.0 /	46.32988C(174, 1)	45.58678C(233, 1)	23.72653C(175, 1)	15.61000C(235, 1)	9.62123C(74, 1)
40.0 /	52.21729 (123, 1)	32.70178 (47, 1)	18.47636C(364, 1)	13.14493 (58, 1)	9.81730C(74, 1)
30.0 /	43.98794C(236, 1)	35.16733 (362, 1)	18.91854C(63, 1)	12.47629C(364, 1)	8.90222C(364, 1)
20.0 /	53.25674C(71, 1)	33.33723C(209, 1)	20.60880C(265, 1)	10.37339C(260, 1)	7.10421C(63, 1)
10.0 /	61.38873C(175, 1)	35.67898C(333, 1)	17.93841C(117, 1)	11.92683C(333, 1)	11.21681C(63, 1)
360.0 /	49.49184C(74, 1)	43.12806C(333, 1)	20.89705C(265, 1)	15.27074C(333, 1)	12.57318C(63, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1982 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 85.98340 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	1000.0	1500.0	RANGE (METERS) 2000.0
350.0 /	3.67404C(117, 1)	2.25410C(117, 1)	1.70607C(117, 1)
340.0 /	4.53508C(177, 1)	2.61321 (264, 1)	1.82770 (264, 1)
330.0 /	4.60396C(161, 1)	2.51381C(209, 1)	1.50425C(209, 1)
320.0 /	7.04043C(355, 1)	4.44544C(355, 1)	3.06513C(355, 1)
310.0 /	6.18492C(263, 1)	3.74311C(21, 1)	2.82656C(263, 1)
300.0 /	7.75907 (195, 1)	5.22814 (195, 1)	3.83090 (195, 1)
290.0 /	7.34479C(193, 1)	4.35546C(224, 1)	3.23836C(224, 1)
280.0 /	7.60895 (331, 1)	4.82821C(137, 1)	3.34916C(137, 1)
270.0 /	7.55567 (217, 1)	5.50867 (217, 1)	3.66989C(73, 1)
260.0 /	7.62918C(70, 1)	4.05125 (15, 1)	2.97539C(70, 1)
250.0 /	9.01430 (295, 1)	5.26914 (295, 1)	3.21142 (29, 1)
240.0 /	11.78701C(329, 1)	6.20652C(329, 1)	4.03159C(329, 1)
230.0 /	8.31269 (299, 1)	4.58872 (271, 1)	3.04300 (271, 1)
220.0 /	5.93581C(56, 1)	2.85298 (271, 1)	1.75798C(322, 1)
210.0 /	3.97612 (266, 1)	2.46138C(247, 1)	1.71038C(247, 1)
200.0 /	4.50290 (298, 1)	2.77653C(71, 1)	2.22908C(71, 1)
190.0 /	4.22905 (309, 1)	2.62538 (309, 1)	1.79011 (309, 1)
180.0 /	4.49990C(72, 1)	2.90090C(72, 1)	1.98407C(72, 1)
170.0 /	3.58374 (26, 1)	2.81751 (118, 1)	2.35622 (118, 1)
160.0 /	3.54939C(37, 1)	2.22791 (26, 1)	1.47609 (26, 1)
150.0 /	4.03808C(224, 1)	2.56530C(51, 1)	1.61699C(51, 1)
140.0 /	4.89698C(9, 1)	2.75707 (182, 1)	1.84433C(76, 1)
130.0 /	6.68478C(9, 1)	4.10052C(51, 1)	3.01099C(51, 1)
120.0 /	5.10110C(237, 1)	2.97567C(112, 1)	2.08323 (181, 1)
110.0 /	4.49831 (181, 1)	2.31723 (181, 1)	1.47988 (181, 1)
100.0 /	3.99053 (164, 1)	2.01166 (48, 1)	1.17456 (165, 1)
90.0 /	4.77444C(236, 1)	2.45680C(235, 1)	1.44759C(50, 1)
80.0 /	5.29054C(236, 1)	2.89047C(236, 1)	1.33338C(236, 1)
70.0 /	3.12781C(19, 1)	2.21473C(19, 1)	1.67804C(19, 1)
60.0 /	3.51001C(74, 1)	2.27388 (172, 1)	1.57871C(213, 1)
50.0 /	4.07589C(235, 1)	2.23448C(235, 1)	1.58914C(185, 1)
40.0 /	2.92884C(364, 1)	1.76806C(364, 1)	1.27517C(235, 1)
30.0 /	2.86979 (3, 1)	1.69889 (47, 1)	1.10570 (47, 1)
20.0 /	3.41286C(37, 1)	2.17568C(37, 1)	1.60942C(333, 1)
10.0 /	2.66072 (363, 1)	1.87173C(260, 1)	1.44055C(260, 1)
360.0 /	3.59952C(333, 1)	2.07737C(333, 1)	1.46822C(265, 1)

RUN ENDED ON 09-08-90 AT 23:20:45

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-48

ISC-ST MODEL RUN

FOR

1984 FOR FUGITIVE EMISSIONS

1 ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)

SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
RUN BEGAN ON 09-08-90 AT 23:20:48

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*** Fugitive Emissions -- 1984 Met Data ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION) WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	1
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	1
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	2
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	1
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	0
NUMBER OF INPUT SOURCES	NSOURC =	10
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0

NUMBER OF X (RANGE) GRID VALUES	NXPNTS = 8
NUMBER OF Y (THETA) GRID VALUES	NYPNTS = 36
NUMBER OF DISCRETE RECEPTORS	NXWYPT = 0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR = 10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET = 9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY = .000000E+00
SURFACE STATION NO.	ISS = 12842
YEAR OF SURFACE DATA	ISY = 84
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 84
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 9538 WORDS

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*** Fugitive Emissions -- 1984 Met Data ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

100.0, 200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

360.0,	10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,
100.0,	110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,
200.0,	210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,
300.0,	310.0,	320.0,	330.0,	340.0,	350.0,				

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*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	.36500E-01	.0	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
2	0	0	0	.36500E-01	91.4	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
3	0	0	0	.36500E-01	-91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
4	0	0	0	.36500E-01	.0	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
5	0	0	0	.36500E-01	91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
6	0	0	0	.36500E-01	-182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
7	0	0	0	.36500E-01	-91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
8	0	0	0	.36500E-01	.0	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
9	0	0	0	.36500E-01	91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
10	0	0	0	.36500E-01	182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00

```
* CALM HOURS (=1) FOR DAY   3 *  1  1  1  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY   4 *  1  0  1  1  1  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  1  0  1  1
* CALM HOURS (=1) FOR DAY   5 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY   6 *  1  1  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY   7 *  0  1  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY   8 *  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  25 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY  26 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0
* CALM HOURS (=1) FOR DAY  28 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1
* CALM HOURS (=1) FOR DAY  29 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  1
* CALM HOURS (=1) FOR DAY  30 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  33 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  34 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  37 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY  38 *  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  44 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1  0  0  1  1
* CALM HOURS (=1) FOR DAY  45 *  1  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY  47 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0  0  1
* CALM HOURS (=1) FOR DAY  48 *  0  0  1  0  1  1  1  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY  49 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  50 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
* CALM HOURS (=1) FOR DAY  51 *  1  0  1  1  0  0  0  1  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  52 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0
* CALM HOURS (=1) FOR DAY  54 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  55 *  1  0  1  1  1  0  0  1  1  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  56 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1  0
* CALM HOURS (=1) FOR DAY  61 *  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  62 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1
* CALM HOURS (=1) FOR DAY  63 *  1  0  1  1  1  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  64 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  69 *  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  73 *  0  0  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  1
* CALM HOURS (=1) FOR DAY  76 *  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY  77 *  0  1  1  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  78 *  0  0  1  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY  79 *  1  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY  82 *  0  0  1  1  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  83 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY  84 *  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  85 *  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  86 *  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  1  1  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  91 *  1  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0
* CALM HOURS (=1) FOR DAY  92 *  0  1  1  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  93 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  97 *  0  0  0  0  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY  98 *  0  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1
* CALM HOURS (=1) FOR DAY  99 *  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0
* CALM HOURS (=1) FOR DAY 102 *  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 103 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  1
* CALM HOURS (=1) FOR DAY 104 *  1  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0
* CALM HOURS (=1) FOR DAY 105 *  0  0  0  0  1  1  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY 106 *  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

* CALM HOURS (=1) FOR DAY 110 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 111 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 112 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 115 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 119 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 121 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 122 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 123 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 128 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 133 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 134 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 136 *	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 142 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 143 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 146 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 147 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 148 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 153 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 154 *	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 156 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 165 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 167 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 169 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 171 *	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 172 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 173 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 179 *	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 182 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 186 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 187 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 189 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 190 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 192 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 194 *	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 195 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 196 *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 197 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 198 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 200 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 201 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 202 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 204 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 212 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 218 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 219 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 220 *	0	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 222 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 223 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 224 *	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 225 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 230 *	0	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 231 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 235 *	1	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 239 *	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 241 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 244 *	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 246 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 247 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 248 *	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 250 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 253 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 254 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 255 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 256 *	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 257 *	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 258 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 259 *	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 273 *	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 277 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

* CALM HOURS (=1) FOR DAY 278 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 279 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 289 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 290 *	0	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 291 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 292 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 295 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 296 *	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 298 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 301 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 302 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 304 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 305 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 308 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
* CALM HOURS (=1) FOR DAY 310 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 315 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 318 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 321 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 322 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 325 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 331 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 334 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 336 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 337 *	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 338 *	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 339 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 342 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 343 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 344 *	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 345 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY 346 *	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 347 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
* CALM HOURS (=1) FOR DAY 348 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 349 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 355 *	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 356 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 357 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 358 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 360 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 365 *	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 366 * 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1

'N'-DAY
366 DAYS
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* 366-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 26.49813 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0	1000.0	1500.0	2000.0
350.0 /	13.42624	4.11110	1.69966	.99712	.64845	.20709	.10472	.06470
340.0 /	17.42805	5.21794	1.98307	1.05599	.67295	.19677	.09972	.06174
330.0 /	18.15983	6.04970	2.79225	1.44556	.90422	.23009	.11305	.07208
320.0 /	18.86631	7.14120	3.52530	2.07722	1.35106	.39512	.20502	.12957
310.0 /	20.27127	7.66502	4.31835	2.89562	2.03110	.63621	.32187	.19776
300.0 /	20.90051	9.55026	5.39265	3.57253	2.63679	.94208	.51656	.33808
290.0 /	21.12593	11.39721	6.74501	4.35747	3.14015	1.04923	.53717	.34151
280.0 /	20.58655	13.63873	7.55813	5.23420	3.72440	1.04191	.53399	.33648
270.0 /	19.65230	16.70341	10.18907	6.27901	4.08398	1.21319	.63971	.40575
260.0 /	21.72856	20.43247	12.64515	7.38455	5.06295	1.38040	.68603	.43123
250.0 /	25.35104	21.48580	15.93598	9.05467	6.02753	1.84583	.96930	.61351
240.0 /	25.37840	20.46668	17.42992	10.07557	6.55440	1.89656	.96071	.59602
230.0 /	25.94725	24.53817	12.43658	7.81267	5.21732	1.57089	.79055	.48182
220.0 /	25.17698	18.23206	9.63048	5.75359	3.72101	1.04566	.53677	.32897
210.0 /	26.49813	16.50896	7.24916	4.30857	2.57700	.61790	.30011	.17971
200.0 /	26.27915	13.65399	6.29822	3.30544	2.07127	.50063	.25334	.15595
190.0 /	23.59367	11.62971	5.23317	2.81591	1.87754	.53240	.26614	.15965
180.0 /	18.57934	12.22822	4.93148	2.75123	1.83579	.56945	.30777	.20195
170.0 /	20.31139	10.33717	4.34475	2.61793	1.84020	.46549	.22385	.13850
160.0 /	23.53098	10.91407	4.59590	2.45224	1.70952	.38977	.17215	.10205
150.0 /	22.23938	12.12484	4.62219	2.70537	1.76412	.47404	.23990	.14778
140.0 /	20.23580	12.27497	5.45610	2.96113	2.01652	.62732	.30067	.18460
130.0 /	16.71238	13.67671	5.75634	3.60630	2.39668	.71908	.37650	.24046
120.0 /	16.51315	9.77343	6.69341	3.49314	2.23206	.63751	.32652	.20582
110.0 /	15.26461	9.50459	5.28943	2.77650	1.68525	.42145	.19865	.11873
100.0 /	12.82878	7.99956	4.03507	2.18657	1.37021	.37824	.18997	.11633
90.0 /	10.74201	7.62375	3.52075	1.76199	1.12572	.31867	.16082	.10053
80.0 /	12.34367	6.37589	2.89924	1.70126	1.02538	.25438	.12564	.07789
70.0 /	11.84261	6.01682	2.70401	1.55744	1.01822	.24772	.11860	.07033
60.0 /	11.31486	5.70009	2.66651	1.56615	1.06109	.31926	.15424	.09260
50.0 /	11.62495	5.74338	2.71832	1.68450	1.13549	.35162	.18838	.12095
40.0 /	17.14210	5.25052	2.58091	1.50707	.99713	.27527	.13936	.08522
30.0 /	16.66224	4.94609	2.23122	1.34427	.90822	.27457	.13743	.08315
20.0 /	17.19903	4.08668	2.03081	1.22086	.81703	.26289	.14111	.09112

10.0 /	15.36275	4.01460	1.78644	1.07186	.74101	.22729	.11251	.06870
360.0 /	10.37541	3.98438	1.67944	1.02955	.69451	.20532	.10873	.06911

1

HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	371.34010 (237, 1)	335.21000 (237, 2)	173.98100 (126,24)	141.08850 (126,24)	110.72530 (237, 1)
340.0 /	441.10880 (358, 6)	326.84830 (145, 4)	186.54860 (189,22)	98.94090 (126, 1)	74.52234 (237, 1)
330.0 /	484.80550 (239, 7)	371.33580 (357, 4)	267.01880 (296, 3)	155.26490 (123, 4)	100.88760 (145, 4)
320.0 /	429.49720 (194, 1)	268.97020 (189, 3)	177.00700 (236,20)	150.30850 (357, 4)	120.75960 (110, 4)
310.0 /	391.41140 (357, 4)	253.53180 (302,19)	172.77180 (145, 4)	129.32210 (194, 1)	94.34502 (296, 3)
300.0 /	421.01170 (182,20)	340.91570 (123, 4)	225.78260 (365, 2)	116.65760 (357, 4)	94.89097 (236,20)
290.0 /	364.31830 (217,22)	327.58660 (203,22)	225.73710 (194, 3)	148.78910 (189, 3)	102.74380 (144, 2)
280.0 /	371.33980 (215, 4)	401.02780 (195, 1)	208.90430 (148, 2)	148.44920 (170, 1)	117.50000 (192, 3)
270.0 /	545.97800 (172, 2)	629.58030 (172, 2)	346.44210 (172, 2)	214.76500 (172, 2)	147.53820 (172, 2)
260.0 /	371.34000 (167, 1)	315.02470 (194, 3)	300.61680 (217,22)	344.66610 (134,24)	274.27280 (192, 5)
250.0 /	352.34260 (77, 9)	353.02790 (302,19)	537.58220 (147,23)	219.76690 (192, 6)	152.78260 (153,21)
240.0 /	364.03230 (128,22)	560.17580 (147,23)	397.78310 (206,21)	252.91160 (197, 4)	170.92180 (250, 1)
230.0 /	429.49680 (212, 1)	408.90040 (128,22)	331.54350 (134,22)	219.07290 (338,21)	184.89050 (296, 7)
220.0 /	429.49680 (249,22)	387.19730 (144, 3)	268.73610 (307, 6)	223.64250 (276, 5)	134.16000 (228, 7)
210.0 /	450.67280 (34, 8)	421.12860 (307, 6)	319.77610 (276, 5)	134.36750 (228, 7)	114.99480 (134,22)
200.0 /	499.03780 (165, 8)	327.58700 (296, 5)	273.91180 (128,24)	159.60730 (307, 2)	104.85390 (283, 4)
190.0 /	487.18180 (203, 4)	440.25160 (276, 5)	204.44550 (103,21)	154.15970 (344,20)	112.65790 (146, 1)
180.0 /	521.20720 (355,20)	607.38510 (355,20)	341.74020 (355,20)	213.10540 (355,20)	146.75660 (355,20)
170.0 /	476.45940 (147,23)	298.51850 (50,24)	219.56150 (353,24)	202.64540 (307, 6)	144.98110 (355,20)
160.0 /	505.34840 (303, 5)	353.02480 (273,21)	351.16030 (344,20)	167.34880 (103,21)	118.23530 (357,24)
150.0 /	455.86280 (98,21)	454.91660 (344,20)	216.10870 (76,22)	132.94900 (247,21)	90.27584 (229, 2)
140.0 /	452.43850 (276, 5)	361.82300 (249,22)	249.64500 (229, 2)	163.78000 (76,22)	114.55180 (247,21)
130.0 /	352.07040 (253,23)	355.59390 (51, 5)	312.78640 (243,21)	222.58070 (135,24)	160.52550 (121,23)
120.0 /	422.86980 (97, 4)	519.52510 (345,19)	382.93660 (122,20)	210.23490 (288,19)	126.20350 (288,19)
110.0 /	410.52230 (229, 9)	322.97870 (155,22)	498.77470 (345,19)	219.76690 (224, 1)	150.30690 (69,21)
100.0 /	367.13610 (255,21)	285.51920 (244, 2)	224.80990 (289,19)	344.66590 (112,21)	274.27280 (224, 4)
90.0 /	496.40110 (224, 4)	570.73210 (224, 4)	311.47920 (224, 4)	191.97540 (224, 4)	131.38010 (224, 4)
80.0 /	343.59710 (230,12)	315.02510 (221,24)	204.44580 (255,21)	154.56110 (345,19)	112.50800 (85, 1)
70.0 /	441.98550 (182,20)	352.95970 (224, 1)	269.51760 (112,21)	148.78900 (289,20)	97.70887 (85, 1)
60.0 /	370.21360 (7, 3)	446.18840 (112,21)	203.06170 (194,22)	132.74360 (82, 1)	116.76960 (289,20)
50.0 /	429.49830 (194,22)	394.37300 (274,22)	278.65950 (274,23)	187.38840 (82, 1)	142.49610 (82, 1)
40.0 /	429.49670 (226, 1)	268.96810 (289,20)	226.01150 (290, 1)	182.40520 (290, 1)	134.17480 (290, 1)
30.0 /	355.19010 (198, 7)	522.83720 (323,20)	227.44300 (226, 1)	155.26380 (290, 1)	115.00730 (324,19)
20.0 /	317.45360 (225,19)	310.64470 (126,24)	354.16410 (337,22)	186.72110 (194,24)	100.66090 (324,19)

10.0 /	346.27090 (170, 6)	274.04320 (126, 5)	225.30180 (237, 1)	167.35660 (189,22)	147.92870 (111,21)
360.0 /	496.40120 (111,21)	570.73240 (111,21)	311.47880 (111,21)	191.95860 (111,21)	131.26550 (111,21)

1

HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	46.93238 (237, 1)	33.81470 (126,24)	26.42562 (126,24)
340.0 /	41.93853 (192,21)	31.39613 (192,21)	25.65672 (192,21)
330.0 /	46.36722 (110,24)	32.19979 (324, 7)	27.85244 (324, 7)
320.0 /	52.23311 (233,23)	36.27763 (296, 3)	28.25499 (194, 1)
310.0 /	44.33868 (357, 4)	35.21225 (357, 4)	28.53113 (357, 4)
300.0 /	52.03748 (123, 6)	37.65559 (123, 6)	29.58911 (135, 1)
290.0 /	58.00766 (144, 2)	40.28788 (171, 4)	31.28842 (171, 4)
280.0 /	54.74670 (192, 3)	42.22206 (170, 1)	32.79879 (170, 1)
270.0 /	75.24714 (333, 6)	44.67033 (34, 8)	35.00606 (34, 8)
260.0 /	80.01579 (202,22)	47.79831 (189,24)	35.23217 (238, 3)
250.0 /	67.32822 (131, 5)	46.54433 (287, 2)	35.48843 (287, 2)
240.0 /	88.68117 (128,22)	59.76577 (128,22)	44.10078 (128,22)
230.0 /	65.71793 (207, 5)	46.01254 (212, 1)	34.60542 (167, 3)
220.0 /	56.93182 (228, 7)	41.73875 (228, 7)	32.37803 (190, 4)
210.0 /	51.14696 (50,24)	37.51112 (321,23)	29.16034 (321,23)
200.0 /	66.21764 (276, 5)	51.14735 (276, 5)	40.24910 (276, 5)
190.0 /	47.59256 (353,24)	33.99667 (283, 4)	27.10900 (283, 4)
180.0 /	49.20744 (355,20)	32.99828 (128,24)	26.09643 (355,20)
170.0 /	46.02690 (64,20)	33.13517 (103,21)	26.89252 (103,21)
160.0 /	42.77128 (76,22)	33.71222 (76,22)	27.36423 (76,22)
150.0 /	49.82157 (224,24)	36.52123 (224,24)	28.04085 (224,24)
140.0 /	54.88004 (154,22)	38.69062 (135,24)	29.65584 (247,21)
130.0 /	60.17338 (318, 4)	38.26708 (253,23)	30.40818 (253,23)
120.0 /	59.88319 (98, 1)	41.41516 (98, 1)	31.39237 (98, 1)
110.0 /	65.44321 (84,24)	41.08106 (84,24)	27.17827 (86, 5)
100.0 /	74.96321 (356,19)	46.67781 (45,22)	34.86246 (45,22)
90.0 /	64.98068 (112,21)	44.63754 (98,21)	34.98064 (98,21)
80.0 /	54.66493 (85, 1)	42.37848 (85, 1)	33.04630 (85, 1)
70.0 /	44.08290 (79,20)	31.61082 (79,20)	24.69349 (79,20)
60.0 /	60.27977 (7, 3)	44.28072 (7, 3)	33.85193 (7, 3)
50.0 /	65.01560 (82, 1)	44.33617 (225,22)	33.74715 (225,22)
40.0 /	57.15528 (226, 1)	41.63391 (226, 1)	31.02970 (226, 1)
30.0 /	38.88993 (324,19)	26.38728 (289,23)	18.61100 (289,23)
20.0 /	47.62660 (198,21)	32.38247 (198,21)	23.54359 (198,21)

10.0 /	49.56039 (143, 1)	33.69107 (194,24)	25.92983 (194,24)
360.0 /	48.20487 (126, 1)	33.47839 (111,21)	27.06044 (111,21)

1

2ND HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	347.82370 (365, 2)	314.25670 (49,23)	172.70400 (183, 3)	137.91800 (237, 1)	102.80620 (126,24)
340.0 /	410.52330 (157, 7)	313.48060 (110,24)	165.68060 (111,21)	80.79624 (200, 5)	67.60622 (192,21)
330.0 /	432.08940 (111, 6)	330.99040 (365, 2)	264.76600 (106, 1)	154.49260 (110,23)	91.10452 (123, 4)
320.0 /	386.26080 (296, 3)	268.97020 (194, 4)	177.00700 (303, 4)	139.36550 (365, 2)	116.63320 (365, 2)
310.0 /	371.97600 (365, 2)	247.88290 (148, 2)	149.98250 (110,24)	108.68720 (123, 4)	94.14236 (233,23)
300.0 /	409.16260 (135, 1)	337.55410 (194, 1)	207.01240 (110, 4)	106.75880 (135, 1)	94.89097 (303, 4)
290.0 /	349.88200 (171, 4)	325.52870 (236,20)	223.53770 (364,23)	148.78910 (194, 4)	102.74380 (186, 4)
280.0 /	367.13660 (187, 2)	401.02780 (227, 6)	206.18350 (121, 4)	146.83110 (192, 3)	117.50000 (201,22)
270.0 /	545.97800 (209, 5)	629.58030 (209, 5)	346.44210 (209, 5)	214.76500 (209, 5)	147.53820 (209, 5)
260.0 /	371.34000 (304, 2)	308.98910 (131, 5)	277.35220 (34, 7)	344.66610 (148, 5)	272.69780 (364,22)
250.0 /	352.08760 (257, 7)	342.90990 (148, 2)	537.58220 (198, 1)	213.48260 (337, 5)	152.78260 (170, 2)
240.0 /	355.19000 (182,20)	560.17580 (198, 1)	373.64220 (287, 3)	252.91160 (207, 6)	170.92180 (260, 3)
230.0 /	418.90590 (167, 3)	387.19990 (147,24)	269.79150 (322, 3)	217.69910 (278, 4)	184.18740 (298, 4)
220.0 /	418.90620 (190, 4)	372.49770 (189,21)	245.69800 (49, 5)	182.40280 (228, 7)	134.16000 (242, 5)
210.0 /	450.67280 (331, 6)	419.15490 (347,22)	226.30240 (296, 7)	134.36750 (242, 5)	106.93070 (322, 3)
200.0 /	486.88510 (303,21)	325.52820 (246, 1)	264.66090 (307, 6)	159.21910 (325, 5)	100.61720 (134,22)
190.0 /	487.18180 (304, 4)	335.20980 (290,21)	197.93830 (357,24)	142.67900 (283, 4)	112.17400 (283, 4)
180.0 /	496.39940 (146, 1)	570.73000 (146, 1)	311.47740 (146, 1)	191.95680 (146, 1)	131.24400 (146, 1)
170.0 /	476.45940 (198, 1)	292.06250 (76,22)	214.42430 (307, 2)	167.35730 (128,24)	118.97230 (128,24)
160.0 /	484.96660 (303,21)	322.97900 (154,22)	276.12930 (146, 1)	163.95190 (343,21)	110.76650 (103,21)
150.0 /	444.23040 (157, 7)	425.75740 (64,20)	214.89390 (283, 4)	131.07370 (91, 4)	85.97237 (243,21)
140.0 /	337.21720 (204,22)	327.84930 (296, 7)	230.47140 (344,20)	163.26120 (135,24)	113.24050 (91, 4)
130.0 /	332.83680 (148, 2)	342.37090 (73, 1)	297.29380 (101,23)	217.13520 (229, 2)	139.03910 (173,24)
120.0 /	398.03500 (77, 9)	445.56390 (356,19)	382.93660 (173, 5)	206.89230 (336,19)	125.25940 (336,19)
110.0 /	324.44750 (190, 3)	306.45100 (102, 1)	462.09690 (356,19)	212.00710 (174, 2)	143.94290 (253,22)
100.0 /	348.52680 (143, 1)	277.38360 (84,24)	224.01780 (175,24)	236.00540 (98,21)	223.34400 (98,21)
90.0 /	357.00890 (143, 1)	403.34180 (98,21)	238.63840 (274,23)	135.61560 (98,21)	119.19700 (85, 1)
80.0 /	334.89480 (323,20)	286.04880 (8, 3)	190.97020 (290, 1)	147.08330 (85, 1)	111.23100 (5,22)
70.0 /	441.10850 (197,16)	342.90010 (253,22)	267.16020 (98,21)	142.28520 (175,24)	96.18184 (5,22)
60.0 /	351.44510 (189,22)	372.04940 (175,24)	170.78170 (112,22)	132.60250 (345,22)	105.41120 (24,23)
50.0 /	418.91840 (225,22)	394.37300 (289,21)	224.78950 (82, 1)	187.15790 (345,22)	142.38570 (345,22)
40.0 /	355.84140 (216,18)	252.91380 (289,23)	201.78120 (345,23)	159.92020 (194,22)	107.77500 (226, 1)
30.0 /	330.01050 (188, 6)	514.36520 (143, 1)	205.05740 (55,20)	133.91420 (198,21)	90.37132 (290, 1)
20.0 /	312.19790 (358, 6)	304.40230 (345,23)	340.77350 (337,23)	139.59690 (111,20)	88.56284 (194,24)

10.0 /	337.14980 (258,15)	235.15150 (323,23)	188.98430 (244, 2)	166.41690 (126, 1)	119.02250 (189,22)
360.0 /	395.31160 (233,23)	426.77860 (119, 5)	232.87680 (119, 5)	143.51130 (119, 5)	104.24730 (126,24)

1

2ND HIGH
1-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	44.90875 (183, 3)	32.06796 (237, 1)	25.74883 (237, 1)
340.0 /	31.48395 (237, 2)	25.21394 (237, 2)	20.03644 (237, 2)
330.0 /	40.49514 (145, 4)	31.45595 (126, 5)	26.11715 (126, 5)
320.0 /	52.06414 (55, 6)	36.25327 (106, 1)	26.55616 (296, 3)
310.0 /	43.83572 (236,20)	30.95886 (365, 2)	23.58627 (365, 2)
300.0 /	52.03748 (219, 3)	37.65559 (219, 3)	29.55032 (57, 3)
290.0 /	58.00766 (186, 4)	40.28788 (235, 4)	31.28842 (235, 4)
280.0 /	54.74670 (201,22)	42.15665 (48, 2)	32.76285 (48, 2)
270.0 /	73.01703 (170, 6)	44.67033 (331, 6)	35.00606 (331, 6)
260.0 /	79.89029 (153,23)	47.71792 (356, 2)	35.19387 (354, 2)
250.0 /	67.24725 (344, 7)	46.52768 (339, 4)	35.47979 (339, 4)
240.0 /	70.98037 (165, 3)	47.79501 (147,24)	35.64310 (147,24)
230.0 /	65.71793 (219,21)	45.97092 (338,22)	34.60542 (260, 5)
220.0 /	56.93182 (242, 5)	41.73875 (242, 5)	32.37803 (193, 6)
210.0 /	50.51118 (321,23)	36.73213 (144, 3)	28.63774 (144, 3)
200.0 /	44.25238 (290,21)	31.96578 (290,21)	23.81148 (290,21)
190.0 /	47.17683 (283, 4)	33.59139 (353,24)	26.96961 (353,24)
180.0 /	47.28886 (347,22)	32.57111 (355,20)	25.71946 (128,24)
170.0 /	43.40531 (103,21)	33.06272 (343,21)	26.85162 (343,21)
160.0 /	38.72293 (309,20)	28.73513 (309,20)	23.25370 (309,20)
150.0 /	37.35162 (31,24)	29.33411 (4,22)	23.88004 (4,22)
140.0 /	52.40512 (229, 2)	38.61752 (62,21)	29.61670 (91, 4)
130.0 /	49.24390 (253,23)	35.73549 (156, 1)	28.14016 (156, 1)
120.0 /	57.28244 (221,24)	38.25815 (221,24)	28.16053 (221,24)
110.0 /	61.41123 (69,21)	34.64199 (69,21)	26.91921 (84,24)
100.0 /	74.94316 (356,20)	42.11626 (255,21)	34.32055 (255,21)
90.0 /	56.93813 (175,24)	43.44730 (112,21)	33.79122 (224, 4)
80.0 /	51.65057 (5,22)	37.74976 (5,22)	30.83800 (5,22)
70.0 /	41.49729 (289,19)	31.12521 (289,19)	24.43294 (289,19)
60.0 /	53.32662 (274,22)	36.90598 (274,22)	27.79859 (274,22)
50.0 /	65.00053 (345,22)	44.09075 (82, 1)	31.91574 (82, 1)
40.0 /	56.20969 (290, 1)	39.38369 (290, 1)	30.14205 (290, 1)
30.0 /	38.57737 (345,23)	26.34609 (29, 2)	18.59072 (29, 2)
20.0 /	38.77083 (244, 2)	26.56595 (24,24)	21.09657 (24,24)

10.0 /	44.81605 (323,20)	25.18672 (111,20)	19.38454 (111,20)
360.0 /	46.10718 (111,21)	33.27444 (189,22)	26.09108 (189,22)

1

HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 374.90820 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	176.38850 (110, 2)	185.56900 (237, 1)	81.03781 (237, 1)	73.36507 (337, 8)	57.19154 (237, 1)
340.0 /	194.28090 (157, 3)	181.90920 (110, 8)	119.07490 (126, 2)	53.59682 (110, 8)	45.43243 (237, 1)
330.0 /	276.50230 (303, 2)	188.79660 (293, 1)	106.98410 (296, 1)	82.50066 (110, 8)	60.74724 (110, 8)
320.0 /	199.05740 (188, 2)	136.34170C(194, 1)	79.69744 (293, 1)	71.63876 (357, 2)	69.63309 (110, 2)
310.0 /	220.78610 (297, 1)	131.32190 (357, 2)	92.36260 (357, 2)	78.43999 (357, 2)	61.61270 (203, 8)
300.0 /	219.46840 (337, 8)	180.34960C(123, 2)	121.51620 (110, 2)	89.38875 (357, 2)	66.36707 (203, 8)
290.0 /	224.41700 (341, 2)	194.28450 (303, 2)	129.28140C(364, 8)	84.99598 (189, 1)	75.45927 (187, 1)
280.0 /	210.41260 (339, 2)	222.99460 (215, 2)	97.80861 (140, 1)	103.86780 (303, 2)	67.46385 (345, 1)
270.0 /	268.69880 (198, 1)	306.55270 (198, 1)	163.74750 (198, 1)	106.90190 (292, 1)	79.25182 (292, 1)
260.0 /	237.26140 (304, 1)	184.58400 (297, 1)	197.78910 (215, 2)	209.42200 (192, 2)	145.32370 (192, 2)
250.0 /	222.29760 (297, 1)	202.32050 (339, 2)	349.90260 (198, 1)	136.01010 (188, 2)	94.79767 (188, 2)
240.0 /	225.13550 (315, 2)	374.90820 (198, 1)	226.43970 (353, 8)	168.04440C(212, 8)	122.38720 (280, 2)
230.0 /	235.58080 (215, 2)	249.23290 (315, 2)	159.22670 (49, 2)	152.09950 (49, 2)	90.75116 (32, 8)
220.0 /	212.33240C(193, 2)	189.53600 (189, 7)	192.50670 (307, 2)	118.17830 (49, 2)	72.14763 (343, 2)
210.0 /	288.58220 (192, 2)	233.82280 (307, 2)	159.55940 (276, 2)	87.31277 (307, 2)	66.83611 (49, 2)
200.0 /	302.69760 (198, 1)	181.54590 (154, 8)	172.12440 (307, 2)	98.41805 (3, 8)	55.05396 (283, 2)
190.0 /	314.94960 (198, 1)	198.49950 (353, 8)	109.27010 (154, 8)	76.09825 (3, 8)	66.33147 (283, 2)
180.0 /	271.57140 (153, 8)	262.93950 (355, 7)	159.98610 (355, 7)	93.26260 (355, 7)	59.93377 (283, 2)
170.0 /	284.09000 (198, 1)	133.39820 (353, 7)	152.57060 (3, 8)	108.97110 (307, 2)	67.62260 (154, 8)
160.0 /	337.87210 (198, 1)	198.60840 (353, 8)	163.00330 (344, 7)	85.80919 (343, 7)	72.93211 (154, 8)
150.0 /	241.99610 (176, 1)	242.53280 (344, 7)	109.29760 (273, 7)	79.14015 (135, 8)	63.63357 (154, 8)
140.0 /	200.03350 (302, 6)	177.63440 (76, 7)	153.84800 (135, 8)	88.21455C(91, 2)	66.12766 (7, 8)
130.0 /	152.39450 (273, 7)	184.56050 (272, 8)	188.67780 (90, 8)	108.20010 (98, 1)	72.19308 (98, 1)
120.0 /	218.15720 (199, 1)	295.68060 (356, 7)	211.69380 (90, 8)	163.87130 (90, 8)	104.10270 (90, 8)
110.0 /	180.49650 (203, 8)	259.69560 (90, 8)	314.53380 (356, 7)	149.72950 (356, 7)	74.11717 (174, 1)
100.0 /	192.31240 (45, 8)	142.17990 (86, 2)	122.69460 (175, 8)	123.68410 (112, 7)	91.42426C(224, 2)
90.0 /	179.33370 (98, 7)	212.75180 (98, 7)	104.91320 (231, 8)	63.99181C(224, 2)	52.64339C(231, 2)
80.0 /	197.11740 (90, 8)	145.43740 (289, 7)	78.92976 (55, 8)	64.94238 (356, 7)	49.54960 (289, 7)
70.0 /	265.53880 (197, 6)	154.94840 (274, 8)	114.57540 (289, 7)	93.14602 (289, 7)	64.68616 (289, 7)
60.0 /	229.78060 (341, 2)	172.97400 (112, 7)	118.46210 (225, 8)	85.83833 (289, 7)	78.82538 (289, 7)
50.0 /	247.22990 (225, 8)	193.20380 (248, 7)	148.67980 (109, 8)	107.09550 (109, 8)	81.06909 (109, 8)
40.0 /	220.83120C(283, 6)	153.05480 (113, 8)	119.38350C(345, 8)	108.20830 (225, 8)	58.57317 (225, 8)
30.0 /	175.21260 (214, 7)	287.37530 (337, 8)	122.90990 (289, 8)	59.54642C(226, 1)	42.27681 (104, 8)
20.0 /	156.14080 (198, 7)	153.00660C(226, 1)	231.64590 (337, 8)	62.24037C(194, 8)	49.70013 (180, 8)

10.0 /	208.41390C(194, 8)	148.86200 (183, 1)	95.94099 (237, 1)	66.27512 (126, 1)	67.45170 (111, 7)
360.0 /	189.54740 (337, 8)	217.81250 (337, 8)	117.59550 (337, 8)	71.01028 (337, 8)	57.80712 (111, 7)

1 HIGH 3-HR SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 374.90820 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	26.28583 (237, 1)	12.48701 (237, 1)	8.90369 (237, 1)
340.0 /	18.04840 (182, 8)	10.47617C(192, 7)	8.55421C(192, 7)
330.0 /	20.31058 (110, 8)	11.93351 (126, 2)	9.41935 (324, 3)
320.0 /	23.37820 (110, 8)	16.16227 (110, 8)	12.17862 (110, 8)
310.0 /	26.78068 (203, 8)	15.82763 (293, 1)	12.81983 (293, 1)
300.0 /	34.29881 (357, 2)	20.00551 (357, 2)	14.55894 (126, 8)
290.0 /	39.28017 (199, 1)	26.35491 (199, 1)	19.58122 (199, 1)
280.0 /	26.74698 (345, 1)	19.50698 (57, 2)	15.50518 (57, 2)
270.0 /	38.01239 (192, 2)	27.84062 (192, 2)	18.69015 (192, 2)
260.0 /	41.02728 (93, 1)	22.48499 (304, 1)	18.49445 (304, 1)
250.0 /	44.32316 (297, 1)	30.96432 (297, 1)	23.03794 (297, 1)
240.0 /	54.41072 (315, 2)	35.92683 (315, 2)	26.07687 (315, 2)
230.0 /	44.20492 (281, 2)	26.99792 (353, 8)	20.45694 (353, 8)
220.0 /	36.93619 (49, 2)	22.16907 (306, 2)	14.32896 (306, 2)
210.0 /	21.96779 (49, 2)	12.50371 (321, 8)	9.72011 (321, 8)
200.0 /	22.07255 (276, 2)	17.04912 (276, 2)	13.41637 (276, 2)
190.0 /	30.18684 (3, 8)	22.22929 (3, 8)	16.92730 (3, 8)
180.0 /	24.13725 (307, 2)	17.78618 (307, 2)	12.41229 (344, 7)
170.0 /	22.05664 (343, 7)	16.01502 (343, 7)	12.06623 (343, 7)
160.0 /	21.18203 (154, 8)	11.23741C(76, 8)	9.12141C(76, 8)
150.0 /	24.75938 (244, 8)	15.96680 (244, 8)	10.65189 (244, 8)
140.0 /	26.83006 (62, 7)	15.89162 (247, 7)	11.83720 (247, 7)
130.0 /	33.67349 (90, 8)	20.03693 (90, 8)	13.73176C(172, 8)
120.0 /	35.69975 (5, 7)	20.88901 (5, 7)	14.14043 (5, 7)
110.0 /	33.63580 (86, 2)	22.68713 (86, 2)	17.07855 (86, 2)
100.0 /	49.96879 (356, 7)	27.88126 (356, 7)	14.16830 (356, 7)
90.0 /	30.52089 (112, 7)	19.53779 (112, 7)	11.66021 (98, 7)
80.0 /	18.22164C(85, 1)	14.12616C(85, 1)	11.01543C(85, 1)
70.0 /	29.34572 (289, 7)	17.19200 (289, 7)	10.73617 (289, 7)
60.0 /	32.04033 (289, 7)	18.06068 (289, 7)	12.29860 (248, 7)
50.0 /	38.49182 (109, 8)	24.90438 (225, 8)	19.01624 (225, 8)
40.0 /	27.78428C(226, 1)	18.59004C(226, 1)	13.35728C(226, 1)
30.0 /	20.49873 (104, 8)	13.54924 (113, 8)	10.22348 (113, 8)
20.0 /	25.11421 (25, 1)	15.20713 (25, 1)	10.72882 (25, 1)

10.0 /	21.25161C(346, 2)	11.23036C(194, 8)	8.64328C(194, 8)
360.0 /	22.61045 (337, 8)	17.07428 (337, 8)	12.74321 (337, 8)

1

2ND HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 350.72300 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	167.91670 (192, 2)	143.40380 (198, 8)	76.99866 (183, 1)	65.49507 (237, 1)	35.35930 (99, 7)
340.0 /	191.71770 (330, 5)	143.07210C(123, 2)	76.10973 (110, 2)	45.25787 (126, 1)	32.01837 (196, 8)
330.0 /	259.47050 (198, 1)	159.77250 (126, 2)	96.19130 (106, 1)	63.19732 (126, 2)	42.35500 (126, 2)
320.0 /	196.52790C(194, 1)	128.57520 (106, 1)	79.66467 (198, 8)	68.41253 (293, 1)	52.44311C(365, 1)
310.0 /	192.71970 (293, 1)	126.03560 (293, 1)	91.47833 (110, 8)	71.99474C(194, 1)	61.44022 (357, 2)
300.0 /	206.65290 (357, 2)	179.92470 (192, 2)	113.59220 (357, 2)	65.77063 (295, 2)	56.09428 (357, 2)
290.0 /	211.19910 (215, 2)	168.55500 (203, 8)	110.25980 (34, 3)	76.36316 (199, 1)	74.00772 (199, 1)
280.0 /	172.09400 (243, 1)	201.83760 (187, 1)	95.53377 (187, 1)	76.23540 (215, 2)	65.18488 (215, 2)
270.0 /	232.41840 (292, 1)	278.61280 (292, 1)	161.42240 (292, 1)	105.62250 (192, 2)	75.11321 (213, 1)
260.0 /	226.94180 (126, 1)	170.72890C(308, 2)	169.29970 (170, 1)	150.04890C(148, 2)	116.04430 (209, 2)
250.0 /	211.82500 (306, 8)	190.78630 (148, 1)	330.82660 (303, 2)	129.60350 (147, 8)	93.93687 (216, 8)
240.0 /	212.13830 (216, 8)	350.72300 (303, 2)	223.57820 (260, 2)	159.37170 (280, 2)	113.81310C(212, 8)
230.0 /	209.24450 (353, 8)	243.03910 (165, 1)	146.18740 (353, 8)	121.67830 (306, 2)	86.74606 (343, 2)
220.0 /	201.43360 (193, 1)	170.53440C(193, 2)	163.40210 (49, 2)	100.67780 (276, 2)	71.62881 (49, 2)
210.0 /	203.52950 (144, 1)	228.48300 (353, 8)	109.77400 (32, 8)	79.05623 (49, 2)	47.11357 (353, 8)
200.0 /	245.10070 (214, 7)	177.32610 (49, 2)	114.29110 (353, 7)	67.70022 (307, 1)	45.83606 (335, 2)
190.0 /	298.77640 (303, 2)	166.06570 (90, 8)	101.02500 (3, 8)	71.77222 (2, 8)	57.90417 (3, 8)
180.0 /	270.91920 (198, 1)	245.31350 (283, 1)	127.55420 (344, 7)	78.49068 (344, 7)	53.45732 (344, 7)
170.0 /	275.40510 (303, 2)	132.42090 (290, 7)	147.85820 (154, 8)	79.36942 (154, 8)	53.36741 (46, 1)
160.0 /	281.96850 (303, 2)	172.15050 (3, 8)	124.88480 (135, 8)	61.37327 (103, 7)	51.04255C(220, 8)
150.0 /	234.74370 (194, 7)	209.26640 (283, 1)	100.90600 (8, 1)	76.80864 (68, 8)	54.70415 (7, 8)
140.0 /	190.05600 (204, 8)	170.16900 (154, 8)	135.32920 (90, 8)	76.21347 (62, 7)	62.45512 (77, 8)
130.0 /	140.81570C(172, 8)	171.46670 (98, 1)	143.46520 (101, 8)	97.02016 (62, 7)	70.22616 (50, 7)
120.0 /	190.51250 (307, 2)	173.17500C(345, 7)	200.89780 (98, 1)	120.55840C(288, 7)	85.82652 (5, 7)
110.0 /	173.98380 (135, 8)	172.26630 (77, 8)	166.25820C(345, 7)	116.23330 (174, 1)	64.42647 (90, 2)
100.0 /	170.62610 (356, 7)	134.66720 (177, 1)	109.94460 (90, 8)	87.33698 (175, 8)	78.28009C(231, 2)
90.0 /	165.46700C(224, 2)	190.24400C(224, 2)	103.82640C(224, 2)	60.10944C(231, 2)	43.79338C(224, 2)
80.0 /	185.17440 (102, 5)	108.90040 (174, 1)	68.38293 (289, 7)	62.29043 (231, 8)	42.79179 (180, 1)
70.0 /	175.99130 (337, 8)	144.91370 (337, 8)	94.82858 (112, 7)	61.87283 (231, 8)	51.02037 (231, 8)
60.0 /	190.89200 (126, 1)	146.93410 (177, 2)	114.80520 (289, 7)	71.24108C(82, 1)	69.29879 (274, 8)
50.0 /	216.54750 (109, 8)	178.75140 (274, 8)	140.15970 (274, 8)	105.03580 (225, 8)	79.76360 (274, 8)
40.0 /	187.52260 (260, 3)	134.50620 (25, 4)	111.46750 (6, 7)	82.58577 (6, 7)	52.99800C(226, 1)
30.0 /	141.10620 (165, 3)	251.17350 (225, 8)	93.18331 (25, 1)	54.91081 (25, 1)	38.33578 (324, 7)
20.0 /	152.42220 (192, 2)	133.19860 (126, 1)	114.79620C(346, 2)	58.38863 (85, 8)	39.00401 (25, 1)

10.0 /	167.90950 (110, 8)	123.14760 (182, 8)	73.54677 (126, 1)	61.38000 (111, 7)	40.40668 (119, 2)
360.0 /	166.33460 (111, 7)	190.53740 (111, 7)	104.72820 (111, 7)	70.57140 (111, 7)	47.89772 (337, 8)

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2ND HIGH
3-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 350.72300 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	18.09080 (196, 8)	11.27157 (126, 8)	8.80854 (126, 8)
340.0 /	15.49380 (237, 1)	9.61401 (237, 1)	6.79354 (237, 1)
330.0 /	19.56977 (126, 2)	11.03033 (324, 3)	9.03550 (126, 2)
320.0 /	22.73293 (106, 1)	13.59386 (106, 1)	9.41833C(194, 1)
310.0 /	22.42053 (110, 2)	14.49778 (198, 8)	11.27337 (198, 8)
300.0 /	29.28747 (203, 8)	18.93414 (203, 8)	14.13704 (357, 2)
290.0 /	31.18352 (189, 1)	19.83693 (189, 1)	12.60325C(79, 1)
280.0 /	26.64383 (215, 2)	15.63034 (201, 8)	12.11336 (201, 8)
270.0 /	32.97346 (49, 3)	22.70795 (49, 3)	16.56017 (216, 2)
260.0 /	34.86666 (147, 8)	22.11925C(198, 2)	17.68092C(198, 2)
250.0 /	43.15276 (331, 1)	28.51024 (331, 1)	20.42091 (351, 8)
240.0 /	52.03688 (280, 2)	30.25862 (280, 2)	20.03309 (280, 2)
230.0 /	38.58143 (277, 2)	24.05049 (260, 2)	18.22053 (260, 2)
220.0 /	35.20670 (306, 2)	14.77178 (49, 2)	10.79268C(190, 2)
210.0 /	17.52229 (32, 2)	12.38231 (49, 2)	9.54591 (144, 1)
200.0 /	21.45872 (70, 2)	13.20653 (70, 2)	8.05070 (70, 2)
190.0 /	26.24749 (2, 8)	15.31341 (283, 2)	10.44349 (335, 2)
180.0 /	22.88805 (283, 1)	16.23369 (344, 7)	12.38819 (307, 2)
170.0 /	20.01108 (68, 8)	14.55947 (154, 8)	11.14437 (154, 8)
160.0 /	19.55691C(220, 8)	9.70250 (68, 8)	7.75123C(309, 7)
150.0 /	23.49531 (7, 8)	14.52807 (7, 8)	10.33319 (31, 8)
140.0 /	25.76484 (244, 8)	15.77638 (62, 7)	10.36034 (62, 7)
130.0 /	28.20375 (98, 1)	18.06730C(172, 8)	13.15325 (98, 1)
120.0 /	30.24420 (90, 8)	18.21844 (115, 7)	13.74625 (115, 7)
110.0 /	32.44470 (90, 2)	18.33805 (90, 2)	12.48259 (36, 1)
100.0 /	24.92693 (31, 8)	15.55927 (45, 8)	11.62082 (45, 8)
90.0 /	21.65055 (356, 7)	14.87918 (98, 7)	11.26374C(224, 2)
80.0 /	17.21686C(5, 8)	12.58325C(5, 8)	10.27933C(5, 8)
70.0 /	16.84798 (177, 1)	10.53694C(79, 7)	8.23116C(79, 7)
60.0 /	27.03275 (274, 8)	17.28095 (274, 8)	12.01084 (289, 7)
50.0 /	34.90499 (225, 8)	24.75491 (109, 8)	17.87981 (109, 8)
40.0 /	27.71860 (289, 8)	15.21712 (6, 7)	10.64879 (6, 7)
30.0 /	18.71565 (125, 8)	12.87398 (125, 8)	9.26148 (125, 8)
20.0 /	16.29512 (85, 8)	10.79416 (198, 7)	7.84786 (198, 7)

10.0 /	18.83161 (337, 8)	10.25425 (85, 7)	7.84800 (85, 7)
360.0 /	20.78047 (126, 1)	12.75474 (111, 7)	9.37094 (111, 7)

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HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 228.05040 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	94.56036C(110, 1)	86.15228 (237, 1)	44.17705 (183, 1)	31.44217C(337, 3)	21.44683 (237, 1)
340.0 /	120.85920 (217, 1)	75.84867 (110, 3)	56.95258 (126, 1)	33.73206 (126, 1)	22.40196C(218, 1)
330.0 /	182.81290C(198, 1)	103.83870 (126, 1)	69.27567C(106, 1)	31.91785 (110, 3)	23.52598C(110, 1)
320.0 /	170.95100C(194, 1)	104.36210C(194, 1)	49.31411 (141, 1)	36.38952 (357, 1)	40.40308C(110, 1)
310.0 /	138.51730 (297, 1)	77.61852C(365, 1)	51.84170 (145, 1)	41.39850 (357, 1)	32.68521C(62, 1)
300.0 /	139.06560C(259, 1)	99.06811C(123, 1)	72.55968C(365, 1)	44.92927C(79, 1)	38.05083C(62, 1)
290.0 /	133.70970 (215, 1)	107.94790C(79, 1)	72.53490C(62, 1)	54.26934C(194, 1)	40.33603C(187, 1)
280.0 /	117.85520C(279, 1)	151.22390C(79, 1)	79.66364C(356, 1)	62.26601C(345, 1)	54.43686C(345, 1)
270.0 /	145.69910C(304, 1)	151.48960C(198, 1)	97.26058C(365, 1)	76.11227C(34, 1)	50.60841C(198, 1)
260.0 /	163.24380C(165, 1)	142.63170 (353, 1)	123.72940C(64, 1)	94.98351C(148, 1)	79.97621C(304, 1)
250.0 /	151.57110 (353, 1)	142.35620C(148, 1)	217.05590C(198, 1)	103.45400C(93, 1)	74.38464C(321, 1)
240.0 /	126.95500 (315, 1)	228.05040C(198, 1)	204.43710C(279, 1)	119.61390 (280, 1)	84.99737 (280, 1)
230.0 /	153.21650 (281, 1)	186.68550C(165, 1)	122.79780C(279, 1)	85.84563C(279, 1)	64.50139C(343, 1)
220.0 /	179.91720C(193, 1)	120.28600C(298, 1)	106.53550 (307, 1)	60.61330C(305, 1)	39.65351C(343, 1)
210.0 /	145.11230C(49, 1)	135.78340C(279, 1)	76.28437 (276, 1)	50.36223 (307, 1)	43.94233C(49, 1)
200.0 /	198.26440C(198, 1)	113.07600C(49, 1)	74.41257 (307, 1)	54.43466 (3, 3)	34.84009 (283, 1)
190.0 /	163.86630C(198, 1)	99.47399 (353, 3)	76.66328C(49, 1)	50.70557 (283, 1)	41.60828 (283, 1)
180.0 /	164.80390C(198, 1)	145.25500 (283, 1)	80.70948 (283, 1)	55.32905 (283, 1)	39.50504 (283, 1)
170.0 /	181.01440C(198, 1)	85.64497C(357, 3)	87.25397 (3, 3)	60.39987 (307, 1)	35.14367 (334, 1)
160.0 /	194.12290C(198, 1)	102.35230 (2, 3)	71.78484C(344, 3)	52.58567C(343, 3)	33.44273 (154, 3)
150.0 /	125.65680C(203, 1)	108.33030C(103, 3)	60.95755 (154, 3)	51.72250C(91, 1)	34.23071C(62, 3)
140.0 /	112.93300 (302, 2)	115.96320C(224, 3)	73.09039C(62, 3)	64.55653C(91, 1)	42.84149 (7, 3)
130.0 /	85.21226 (2, 3)	123.51740C(221, 3)	95.57579 (90, 3)	65.23956C(222, 3)	50.13031C(98, 1)
120.0 /	117.06340C(97, 1)	168.46210C(356, 3)	120.25930 (90, 3)	91.42925 (90, 3)	57.50732 (90, 3)
110.0 /	90.70470C(62, 1)	129.04780 (90, 3)	172.17700C(356, 3)	75.86150C(356, 3)	38.33472 (174, 1)
100.0 /	111.86440C(255, 3)	81.81737 (86, 1)	63.00356C(5, 3)	54.48423C(224, 1)	67.49141C(224, 1)
90.0 /	136.40210C(194, 3)	144.64040C(194, 3)	69.35057C(345, 3)	54.41450C(224, 1)	38.84664C(224, 1)
80.0 /	105.35100C(337, 3)	92.78236C(254, 1)	46.38846 (56, 1)	44.22823C(345, 3)	23.95273 (231, 3)
70.0 /	110.48710C(337, 3)	118.44370C(274, 3)	71.89169 (289, 3)	46.24028 (289, 3)	33.74336 (289, 3)
60.0 /	128.57070 (126, 1)	84.62337 (177, 1)	74.48735 (289, 3)	49.22428 (289, 3)	43.54727C(274, 3)
50.0 /	107.10730 (225, 3)	136.92650C(274, 3)	102.53290C(274, 3)	65.37556C(274, 3)	52.40688C(274, 3)
40.0 /	89.30408 (303, 2)	95.76597 (289, 3)	79.42375C(345, 3)	50.55411C(105, 1)	33.94424C(105, 1)
30.0 /	115.07620C(6, 3)	135.92690C(337, 3)	54.72031 (25, 1)	37.51093 (25, 1)	24.84603 (113, 3)
20.0 /	101.55840C(194, 3)	84.17840C(345, 3)	102.12090C(337, 3)	44.37730 (85, 3)	29.93931 (85, 3)

10.0 /	138.94940C(290, 2)	87.45390 (85, 3)	45.01210 (180, 3)	42.70531 (126, 1)	29.54254C(111, 3)
360.0 /	105.88760C(106, 1)	98.84734 (110, 3)	50.39807C(337, 3)	30.60431C(111, 3)	24.92268C(111, 3)

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HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 228.05040 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	9.85719 (237, 1)	5.86372 (183, 1)	3.68351 (183, 1)
340.0 /	10.09698C(218, 1)	5.44690C(218, 1)	4.27711C(192, 3)
330.0 /	9.52443 (324, 1)	7.82515 (324, 1)	6.50033 (324, 1)
320.0 /	16.89246C(106, 1)	9.22208C(106, 1)	6.29395C(55, 1)
310.0 /	13.75877 (141, 1)	8.17429 (293, 1)	6.28337 (293, 1)
300.0 /	20.23430C(62, 1)	13.67302C(62, 1)	10.17157C(62, 1)
290.0 /	21.61247 (199, 1)	12.51844C(79, 1)	9.06009C(79, 1)
280.0 /	22.31776C(345, 1)	11.10621C(345, 1)	7.77800C(345, 1)
270.0 /	20.12652C(64, 1)	11.93447C(192, 1)	8.55069C(34, 1)
260.0 /	28.85212C(198, 1)	14.49126C(239, 1)	10.41703C(239, 1)
250.0 /	26.51230 (351, 3)	17.35773 (351, 3)	12.61476 (353, 1)
240.0 /	29.25218 (280, 1)	14.94978 (280, 1)	10.77303C(165, 1)
230.0 /	29.04869 (281, 1)	17.65215C(279, 1)	13.05251C(279, 1)
220.0 /	18.56775C(49, 1)	9.72665 (285, 3)	6.42246 (285, 3)
210.0 /	14.35725C(49, 1)	8.41990C(49, 1)	5.24078C(49, 1)
200.0 /	11.23314C(342, 3)	7.28669 (354, 3)	5.62027 (354, 3)
190.0 /	16.29569 (2, 3)	10.77987 (3, 3)	8.07210 (3, 3)
180.0 /	14.50974 (283, 1)	9.22103 (334, 1)	6.76806 (334, 1)
170.0 /	13.41866C(103, 3)	8.62197C(103, 3)	6.13037C(103, 3)
160.0 /	12.66666C(76, 3)	7.48218C(91, 1)	5.27977C(91, 1)
150.0 /	13.40557C(4, 3)	10.14043C(4, 3)	7.95198C(4, 3)
140.0 /	16.02059 (244, 3)	9.17636 (244, 3)	6.29087 (7, 3)
130.0 /	19.70376 (90, 3)	11.81761 (90, 3)	7.31472 (90, 3)
120.0 /	18.22882C(5, 3)	11.82456C(254, 1)	8.76756C(254, 1)
110.0 /	15.02612 (86, 1)	9.16968 (86, 1)	6.64355 (86, 1)
100.0 /	24.87350C(356, 3)	13.48580C(356, 3)	6.87396C(356, 3)
90.0 /	12.30670 (112, 3)	7.66105 (112, 3)	5.99401C(224, 1)
80.0 /	9.11082C(85, 1)	7.06308C(85, 1)	5.50772C(85, 1)
70.0 /	13.60555 (289, 3)	7.94525 (289, 3)	4.99757 (289, 3)
60.0 /	16.09755C(274, 3)	9.66881C(274, 3)	5.85277C(274, 3)
50.0 /	18.97013C(274, 3)	10.14519 (109, 3)	7.13109 (225, 3)
40.0 /	13.89214C(226, 1)	9.29502C(226, 1)	6.67864C(226, 1)
30.0 /	12.22156C(345, 3)	6.31862 (113, 3)	4.41116 (113, 3)
20.0 /	11.51756 (25, 1)	6.71105 (25, 1)	4.58707 (25, 1)

10.0 /	10.62580C(346, 1)	6.91467 (85, 3)	4.94515 (85, 3)
360.0 /	12.28521 (126, 1)	7.31755C(337, 3)	5.46138C(337, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 201.82540 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	91.19942 (126, 1)	70.19708 (183, 1)	39.97870C(182, 3)	30.39943 (183, 1)	20.01002C(218, 1)
340.0 /	118.33520C(203, 1)	74.51041C(123, 1)	43.42878C(110, 1)	26.98922C(218, 1)	17.54769 (183, 1)
330.0 /	166.27110C(239, 1)	91.84429 (293, 1)	61.02616C(55, 1)	31.67167C(195, 1)	22.79832 (110, 3)
320.0 /	113.58050C(198, 1)	92.42605C(121, 1)	45.67794C(55, 1)	35.22098 (293, 1)	34.74995C(106, 1)
310.0 /	137.85160 (351, 3)	69.83356 (293, 1)	49.33099C(79, 1)	40.98446C(194, 1)	31.91196C(106, 1)
300.0 /	123.39390 (357, 1)	90.00272C(194, 1)	64.53196C(110, 1)	40.78389 (294, 1)	34.10781C(79, 1)
290.0 /	129.74040 (280, 1)	103.11640 (294, 1)	65.61272C(194, 1)	53.62526C(64, 1)	38.50735 (199, 1)
280.0 /	111.18500C(339, 1)	139.71290C(345, 1)	76.73448C(79, 1)	53.95245C(79, 1)	45.67395 (213, 1)
270.0 /	134.66510C(198, 1)	148.89760 (303, 3)	88.67838C(192, 1)	73.49735C(192, 1)	50.28145 (213, 1)
260.0 /	144.14370C(198, 1)	136.74380C(339, 1)	118.91110C(170, 1)	91.55930C(192, 1)	78.27209C(198, 1)
250.0 /	141.84450C(131, 1)	127.97180C(279, 1)	195.98760C(239, 1)	97.21044C(321, 1)	60.28948C(93, 1)
240.0 /	122.13500 (216, 3)	201.82540C(239, 1)	157.74880C(343, 1)	98.41757C(279, 1)	65.48416C(360, 1)
230.0 /	144.45790C(305, 1)	172.39600 (315, 1)	108.38210C(343, 1)	77.29897C(343, 1)	61.36080C(279, 1)
220.0 /	124.15140C(249, 3)	113.51720 (307, 3)	83.08076C(49, 1)	58.66226C(49, 1)	38.24776C(49, 1)
210.0 /	137.85780C(192, 1)	135.38470 (281, 1)	73.04871 (354, 3)	42.61007C(49, 1)	32.15016C(322, 1)
200.0 /	166.15130C(239, 1)	92.47124C(131, 1)	66.30598 (334, 1)	42.37908 (353, 3)	28.20033 (335, 1)
190.0 /	151.47250 (303, 1)	88.05020 (354, 3)	61.78738 (353, 3)	47.01097 (3, 3)	33.15355 (3, 3)
180.0 /	142.72600C(356, 3)	134.38990 (334, 1)	80.62937 (334, 1)	47.31895 (2, 3)	35.02275 (3, 3)
170.0 /	158.08770C(239, 1)	84.03551C(50, 3)	58.58380 (154, 3)	48.91740 (334, 1)	31.75268 (283, 1)
160.0 /	157.23510C(239, 1)	102.22980 (353, 3)	66.75493 (300, 1)	45.31108C(103, 3)	29.42916 (333, 3)
150.0 /	125.59770 (176, 1)	106.11100C(98, 1)	60.30696C(76, 3)	42.78294C(62, 3)	31.90963 (154, 3)
140.0 /	110.83250C(226, 1)	114.35610C(4, 3)	69.46051 (135, 3)	62.42387C(62, 3)	37.22713 (244, 3)
130.0 /	81.78285C(359, 3)	112.71370C(253, 3)	80.35555C(173, 1)	59.34104 (101, 1)	40.17035 (90, 3)
120.0 /	115.22670C(347, 3)	92.79782C(255, 3)	120.13300C(253, 3)	63.84431C(288, 3)	49.10957C(5, 3)
110.0 /	85.76174 (312, 1)	104.64610C(288, 3)	88.95171C(345, 3)	59.20515C(253, 3)	35.43283C(224, 1)
100.0 /	92.78143 (229, 2)	67.68436C(45, 3)	54.68200C(288, 3)	50.62133 (112, 3)	53.43143C(231, 1)
90.0 /	96.29091C(231, 1)	109.42590C(224, 1)	67.60953C(224, 1)	41.60277C(231, 1)	34.50692C(231, 1)
80.0 /	104.34560C(5, 3)	89.08606 (289, 3)	43.82530C(274, 3)	39.41302 (56, 1)	23.64251 (180, 1)
70.0 /	106.19480 (114, 1)	103.63480C(337, 3)	53.46055 (177, 1)	36.14933 (231, 3)	32.07195 (180, 1)
60.0 /	122.09540C(26, 3)	79.19064 (112, 3)	59.95357 (225, 3)	48.88761C(274, 3)	41.24541 (289, 3)
50.0 /	98.13859C(274, 3)	103.72690 (56, 1)	86.86693 (109, 3)	56.80634 (109, 3)	43.66382 (109, 3)
40.0 /	89.05421 (283, 2)	87.64108 (113, 3)	65.65778C(6, 3)	44.43432C(345, 3)	32.48745C(6, 3)
30.0 /	98.27676 (214, 3)	107.78630C(346, 1)	54.39170C(6, 3)	37.36889C(6, 3)	24.14805C(345, 3)
20.0 /	97.89687C(274, 3)	76.50332C(226, 1)	57.39811C(346, 1)	32.73648 (180, 3)	29.87804 (180, 3)

10.0 /	97.44083 (309, 2)	71.04592C(182, 3)	44.48643 (85, 3)	32.48621 (85, 3)	23.64679 (85, 3)
360.0 /	101.68010C(337, 3)	93.35650C(337, 3)	45.77530C(111, 3)	30.43298C(337, 3)	20.52760C(337, 3)

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2ND HIGH
8-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 201.82540 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	9.44316 (183, 1)	4.88898 (66, 1)	3.49800 (66, 1)
340.0 /	9.02505C(182, 3)	5.23811C(192, 3)	2.98862C(218, 1)
330.0 /	7.61647 (110, 3)	4.47507 (126, 1)	3.38831 (126, 1)
320.0 /	14.60229C(110, 1)	9.04871C(55, 1)	5.68015C(106, 1)
310.0 /	13.03546C(110, 1)	7.79212 (141, 1)	5.32416 (127, 1)
300.0 /	15.25996C(112, 1)	10.19822C(112, 1)	7.59847 (126, 3)
290.0 /	19.81000C(79, 1)	12.08438 (199, 1)	8.88788C(64, 1)
280.0 /	17.88740C(170, 1)	10.67396C(170, 1)	7.23922 (302, 3)
270.0 /	16.59590C(192, 1)	11.07461C(34, 1)	8.01018C(192, 1)
260.0 /	25.16503C(93, 1)	13.73787C(198, 1)	9.54684C(304, 1)
250.0 /	26.38414C(321, 1)	16.96430 (353, 1)	12.29646 (351, 3)
240.0 /	25.09337 (132, 1)	14.93032C(165, 1)	10.73241 (315, 1)
230.0 /	25.70365C(279, 1)	16.26962 (281, 1)	11.25121C(359, 1)
220.0 /	16.03011C(296, 1)	8.38956 (306, 1)	5.68716C(249, 3)
210.0 /	12.76678C(38, 1)	6.16722C(38, 1)	4.27651C(50, 3)
200.0 /	10.95709 (70, 1)	6.99604 (276, 1)	5.36862 (276, 1)
190.0 /	15.48943 (3, 3)	8.88997 (2, 3)	5.52236 (2, 3)
180.0 /	13.39582 (307, 1)	8.42800 (283, 1)	6.13421 (283, 1)
170.0 /	11.03685C(343, 3)	8.00751C(343, 3)	6.03312C(343, 3)
160.0 /	10.81406C(91, 1)	7.30414C(76, 3)	4.96009C(76, 3)
150.0 /	11.50986 (7, 3)	6.72351C(56, 3)	5.21989C(56, 3)
140.0 /	13.56416 (154, 3)	8.88960 (7, 3)	5.91860C(247, 3)
130.0 /	18.70622C(98, 1)	10.02390C(98, 1)	7.03131C(98, 1)
120.0 /	18.18759C(28, 1)	10.69978 (272, 3)	7.87765C(221, 3)
110.0 /	13.16177 (90, 1)	7.84273 (36, 1)	5.44036 (36, 1)
100.0 /	10.85021C(255, 3)	8.10919C(255, 3)	6.31019C(255, 3)
90.0 /	11.03587 (175, 3)	7.28631C(224, 1)	4.99821C(98, 3)
80.0 /	8.43002 (177, 1)	5.39282C(5, 3)	4.40543C(5, 3)
70.0 /	10.04951 (180, 1)	5.60885 (180, 1)	3.56454C(79, 3)
60.0 /	12.93039 (109, 3)	7.38012C(7, 1)	5.64199C(7, 1)
50.0 /	17.59353 (109, 3)	9.93937C(274, 3)	7.03196 (109, 3)
40.0 /	12.04940C(105, 1)	8.21144C(105, 1)	5.78285C(105, 1)
30.0 /	10.49979 (113, 3)	5.15337 (125, 3)	3.62828 (125, 3)
20.0 /	10.92129 (85, 3)	5.87165 (85, 3)	4.00948 (85, 3)

10.0 /	10.21108 (85, 3)	4.81301C(194, 3)	3.70426C(194, 3)
360.0 /	9.69019C(337, 3)	7.21011 (126, 1)	4.50553 (126, 1)

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HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 126.00660 AND OCCURRED AT (100.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	54.78497 (210, 1)	31.33874C(237, 1)	18.42979 (126, 1)	12.81068 (126, 1)	8.17833 (126, 1)
340.0 /	71.56879 (168, 1)	44.97689C(110, 1)	25.47799C(110, 1)	11.82976 (126, 1)	7.46732C(218, 1)
330.0 /	79.82560 (303, 1)	39.58591C(110, 1)	23.44794C(106, 1)	20.01463C(110, 1)	15.42727C(110, 1)
320.0 /	67.63503C(194, 1)	36.70839C(79, 1)	19.02292C(141, 1)	15.20542C(110, 1)	16.73295C(110, 1)
310.0 /	82.36009C(351, 1)	32.46453C(302, 1)	24.61668C(110, 1)	14.47112C(365, 1)	11.36998C(62, 1)
300.0 /	67.19936 (126, 1)	38.18859C(192, 1)	29.87859C(365, 1)	20.03206 (294, 1)	16.40361 (294, 1)
290.0 /	76.36677C(215, 1)	52.98665 (294, 1)	30.84591C(364, 1)	21.85072 (294, 1)	18.44855C(215, 1)
280.0 /	73.26295C(215, 1)	68.52999C(215, 1)	31.96726C(215, 1)	24.79211C(215, 1)	20.08333C(215, 1)
270.0 /	90.97556 (303, 1)	95.10661 (303, 1)	58.75430 (303, 1)	33.45682 (303, 1)	23.01337C(239, 1)
260.0 /	78.01413C(304, 1)	70.34203C(351, 1)	59.88673C(215, 1)	37.00274C(148, 1)	34.57757 (303, 1)
250.0 /	87.35889C(351, 1)	70.52476C(302, 1)	91.86887 (303, 1)	47.63453C(304, 1)	32.48430C(304, 1)
240.0 /	73.63604C(147, 1)	99.25811 (303, 1)	85.18117 (353, 1)	63.94921 (280, 1)	43.78788 (280, 1)
230.0 /	75.10155C(215, 1)	86.78839 (352, 1)	54.96205 (353, 1)	36.79571 (306, 1)	28.43560 (282, 1)
220.0 /	83.58006C(193, 1)	58.93022 (307, 1)	52.70509 (307, 1)	26.18365 (285, 1)	18.80362 (285, 1)
210.0 /	77.52975 (209, 1)	69.13699 (307, 1)	33.81446C(354, 1)	25.82636C(334, 1)	14.60426C(318, 1)
200.0 /	99.52921 (303, 1)	54.22720C(131, 1)	34.13453 (307, 1)	33.23018G(3, 1)	18.77958C(3, 1)
190.0 /	126.00660 (303, 1)	47.07629C(3, 1)	35.40961C(3, 1)	34.29612C(3, 1)	21.84615C(3, 1)
180.0 /	71.30166 (303, 1)	65.61797C(283, 1)	39.27537C(334, 1)	23.20109C(334, 1)	21.58842C(3, 1)
170.0 /	80.29239C(292, 1)	38.61364 (32, 1)	47.98486C(3, 1)	21.23834 (307, 1)	14.24624C(334, 1)
160.0 /	95.53744 (303, 1)	52.08967C(3, 1)	31.07389C(3, 1)	24.05549C(3, 1)	14.08115C(154, 1)
150.0 /	74.00565C(336, 1)	63.59045C(98, 1)	27.72836C(28, 1)	21.87254C(91, 1)	14.50645C(7, 1)
140.0 /	72.37180C(204, 1)	60.34591C(69, 1)	39.13137C(223, 1)	27.20626C(91, 1)	20.61747C(244, 1)
130.0 /	50.34692C(86, 1)	74.33939C(224, 1)	51.56301C(223, 1)	38.50795C(223, 1)	26.03521C(223, 1)
120.0 /	69.67355C(77, 1)	56.15408C(356, 1)	69.56750C(223, 1)	48.31768 (90, 1)	32.93055 (90, 1)
110.0 /	59.71751C(62, 1)	59.48660 (90, 1)	57.39235C(356, 1)	31.86317C(224, 1)	21.17315C(224, 1)
100.0 /	54.87349C(229, 1)	44.60905C(86, 1)	34.64444 (175, 1)	26.81055C(224, 1)	28.34134C(224, 1)
90.0 /	64.00872C(194, 1)	56.20944C(224, 1)	41.02440C(231, 1)	26.71630C(231, 1)	18.27319C(231, 1)
80.0 /	65.14162C(110, 1)	40.97972C(289, 1)	28.33192C(231, 1)	20.40495C(231, 1)	16.46310C(231, 1)
70.0 /	57.39563C(110, 1)	47.02473 (109, 1)	32.41264C(289, 1)	20.80462C(289, 1)	15.06867C(289, 1)
60.0 /	52.03531 (126, 1)	52.68790 (177, 1)	34.25164C(289, 1)	22.47931C(289, 1)	18.55221C(289, 1)
50.0 /	52.83239C(225, 1)	53.49374 (232, 1)	34.15458C(274, 1)	21.96605C(274, 1)	16.98886C(274, 1)
40.0 /	60.58687C(250, 1)	50.96548C(25, 1)	27.56418C(6, 1)	19.06060C(225, 1)	14.09105 (232, 1)
30.0 /	52.66513 (168, 1)	64.40399C(346, 1)	27.88611C(25, 1)	19.85562C(25, 1)	13.11497C(25, 1)
20.0 /	78.75687C(225, 1)	48.00643 (126, 1)	38.63178C(337, 1)	19.81169C(85, 1)	13.41266C(85, 1)

10.0 /	71.95206C(194, 1)	42.34144C(182, 1)	22.45964 (126, 1)	18.90685 (126, 1)	12.01427C(85, 1)
360.0 /	52.63016C(110, 1)	48.19482C(110, 1)	19.65625C(337, 1)	12.10618C(337, 1)	10.26117 (126, 1)

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HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 126.00660 AND OCCURRED AT (100.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	4.51160 (126, 1)	2.93077 (126, 1)	2.00374 (126, 1)
340.0 /	3.36566C(218, 1)	1.81563C(218, 1)	1.28313C(192, 1)
330.0 /	4.39450C(110, 1)	2.63565 (324, 1)	2.18058 (324, 1)
320.0 /	7.51183C(110, 1)	4.15479C(110, 1)	2.76736C(110, 1)
310.0 /	5.12008C(141, 1)	2.96930 (293, 1)	2.23006 (293, 1)
300.0 /	6.98541C(62, 1)	4.68771C(62, 1)	3.47085C(62, 1)
290.0 /	7.63917C(79, 1)	4.81333C(79, 1)	3.44021C(79, 1)
280.0 /	8.15002C(345, 1)	4.21664C(345, 1)	3.08909C(215, 1)
270.0 /	8.68623 (303, 1)	5.77327 (303, 1)	4.14371 (303, 1)
260.0 /	11.21553C(304, 1)	5.80565C(304, 1)	4.12356C(304, 1)
250.0 /	14.89755C(351, 1)	9.12394C(351, 1)	6.19953C(351, 1)
240.0 /	13.71362 (280, 1)	7.64873C(8, 1)	5.11280C(8, 1)
230.0 /	11.89614 (281, 1)	6.86427 (281, 1)	4.72362 (281, 1)
220.0 /	7.81411 (285, 1)	4.94313 (285, 1)	3.26886 (285, 1)
210.0 /	5.39130C(38, 1)	2.77917 (32, 1)	2.00404 (32, 1)
200.0 /	5.43978C(334, 1)	3.12821C(334, 1)	2.36644C(354, 1)
190.0 /	8.74275C(3, 1)	5.72670C(3, 1)	4.28462C(3, 1)
180.0 /	7.77102C(3, 1)	5.08342C(344, 1)	3.63038C(344, 1)
170.0 /	4.03036 (275, 1)	2.41392C(333, 1)	1.81056C(343, 1)
160.0 /	4.34915C(220, 1)	2.24474C(91, 1)	1.58394C(91, 1)
150.0 /	6.46213C(244, 1)	3.89965C(244, 1)	2.67650C(244, 1)
140.0 /	8.81013C(244, 1)	4.35968C(244, 1)	2.87474C(7, 1)
130.0 /	9.41643C(223, 1)	5.27875C(223, 1)	3.47075C(98, 1)
120.0 /	10.43012 (90, 1)	5.32703 (90, 1)	3.39292C(254, 1)
110.0 /	7.18967C(224, 1)	3.50660C(86, 1)	2.53317C(86, 1)
100.0 /	8.29116C(356, 1)	4.49527C(356, 1)	2.29132C(356, 1)
90.0 /	5.45701 (176, 1)	3.34196 (176, 1)	2.36222 (176, 1)
80.0 /	4.09271 (177, 1)	2.12253C(5, 1)	1.72621C(5, 1)
70.0 /	5.87258C(289, 1)	3.40141C(289, 1)	2.13317C(289, 1)
60.0 /	5.69700C(289, 1)	3.03843C(289, 1)	1.98308C(289, 1)
50.0 /	6.58401 (181, 1)	4.18058C(225, 1)	3.18905C(225, 1)
40.0 /	4.84951C(289, 1)	3.02327C(6, 1)	2.03449C(226, 1)
30.0 /	4.25985C(25, 1)	2.39737 (125, 1)	1.64198 (113, 1)
20.0 /	5.31913C(25, 1)	3.05287C(25, 1)	2.06245C(25, 1)

10.0 /	5.60417C(346, 1)	3.13319C(85, 1)	2.20188C(85, 1)
360.0 /	4.48712 (126, 1)	2.72026C(337, 1)	2.02196C(337, 1)

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2ND HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 87.57189 AND OCCURRED AT (100.0, 200.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	54.14796C(198, 1)	25.98249 (183, 1)	16.35464 (183, 1)	12.57840C(337, 1)	7.79885C(237, 1)
340.0 /	69.86022 (42, 1)	36.62549 (126, 1)	20.21228 (126, 1)	11.14699C(110, 1)	7.23790 (126, 1)
330.0 /	79.69586C(198, 1)	37.00705C(365, 1)	20.34205C(55, 1)	11.70540C(195, 1)	8.49274 (145, 1)
320.0 /	65.62362C(304, 1)	35.94603C(194, 1)	16.63902C(128, 1)	13.04565C(166, 1)	11.18598C(106, 1)
310.0 /	64.85343C(308, 1)	30.41673C(215, 1)	24.28382C(79, 1)	14.39948C(357, 1)	10.96592C(166, 1)
300.0 /	62.68073C(197, 1)	36.93116C(246, 1)	25.38566 (57, 1)	18.59152C(79, 1)	15.25108C(79, 1)
290.0 /	75.22603C(197, 1)	49.83268C(79, 1)	28.42183 (158, 1)	21.29368C(64, 1)	17.32060C(365, 1)
280.0 /	65.49951C(345, 1)	57.21537 (205, 1)	30.38305C(356, 1)	24.46476C(186, 1)	19.88717C(345, 1)
270.0 /	59.57714C(198, 1)	71.23781C(198, 1)	45.37367C(198, 1)	26.01470C(192, 1)	20.90255 (303, 1)
260.0 /	64.22530C(165, 1)	64.67448C(308, 1)	50.70752 (205, 1)	32.19351C(192, 1)	33.34359C(304, 1)
250.0 /	69.89907C(131, 1)	69.16685 (280, 1)	83.11163C(239, 1)	41.83566C(360, 1)	29.54661C(351, 1)
240.0 /	63.99525C(302, 1)	85.73612C(239, 1)	73.79595C(279, 1)	49.39333 (353, 1)	32.46519 (353, 1)
230.0 /	72.79657 (281, 1)	83.76648C(165, 1)	49.93137 (280, 1)	33.70419 (353, 1)	25.16910 (281, 1)
220.0 /	76.40087C(51, 1)	58.04168C(131, 1)	45.90727C(344, 1)	25.56327 (276, 1)	18.02644 (299, 1)
210.0 /	77.04271 (42, 1)	67.38017 (281, 1)	33.29220 (32, 1)	22.87242 (285, 1)	14.60316C(38, 1)
200.0 /	87.57189 (168, 1)	49.90261 (307, 1)	33.42557C(344, 1)	19.34694 (2, 1)	14.46126 (2, 1)
190.0 /	71.05182C(239, 1)	44.83048C(354, 1)	28.90490 (2, 1)	20.60414 (2, 1)	15.12872C(334, 1)
180.0 /	68.51937C(356, 1)	63.56898C(334, 1)	32.15046C(283, 1)	19.82318C(283, 1)	14.93686C(334, 1)
170.0 /	74.01902 (303, 1)	37.75529C(343, 1)	24.66689C(154, 1)	19.82877C(344, 1)	13.83167 (317, 1)
160.0 /	76.48685 (168, 1)	47.11446C(154, 1)	30.85027C(344, 1)	16.23154C(343, 1)	12.27336C(220, 1)
150.0 /	69.93571 (42, 1)	50.17533C(4, 1)	27.68826C(3, 1)	19.58377C(7, 1)	13.43566C(154, 1)
140.0 /	71.45172C(302, 1)	57.66982C(224, 1)	37.02457C(28, 1)	23.54150C(244, 1)	19.70343C(7, 1)
130.0 /	47.01566C(345, 1)	58.73985C(253, 1)	49.43140 (90, 1)	35.75321C(28, 1)	25.84467C(28, 1)
120.0 /	49.05542 (90, 1)	50.33603C(91, 1)	64.54086C(253, 1)	37.98967C(223, 1)	24.36907C(223, 1)
110.0 /	58.14288C(229, 1)	49.91464C(223, 1)	43.55171 (176, 1)	28.76344C(174, 1)	19.06330C(174, 1)
100.0 /	54.16948C(255, 1)	41.54817C(85, 1)	28.30355C(86, 1)	25.28623 (176, 1)	20.03056 (176, 1)
90.0 /	58.45591C(55, 1)	55.85449C(231, 1)	38.59924C(224, 1)	20.19287C(224, 1)	13.92596 (176, 1)
80.0 /	50.60110C(102, 1)	36.94387C(254, 1)	22.03388C(255, 1)	15.41423C(345, 1)	10.79573 (177, 1)
70.0 /	46.55273C(337, 1)	43.36529C(231, 1)	27.61209 (177, 1)	16.27129C(231, 1)	13.20359C(231, 1)
60.0 /	50.92831C(224, 1)	40.87282 (175, 1)	31.51194C(225, 1)	16.91123 (232, 1)	13.95984C(274, 1)
50.0 /	49.50735 (181, 1)	53.47087 (181, 1)	29.88553 (181, 1)	20.98086 (181, 1)	15.62100 (181, 1)
40.0 /	56.76319 (15, 1)	47.78920C(289, 1)	26.19585C(337, 1)	18.88228C(105, 1)	13.19925C(6, 1)
30.0 /	52.06908C(6, 1)	53.15854C(337, 1)	23.00820C(6, 1)	15.43204C(6, 1)	10.01573 (125, 1)
20.0 /	61.50475C(55, 1)	36.72813C(25, 1)	29.32914C(346, 1)	14.20971C(346, 1)	11.65920C(25, 1)

10.0 /	70.10244C(225, 1)	40.28947C(85, 1)	22.09027C(85, 1)	16.42546C(85, 1)	9.59077C(111, 1)
360.0 /	43.19277C(289, 1)	36.09292C(337, 1)	16.28320C(182, 1)	12.08177 (126, 1)	8.20129C(111, 1)

1

2ND HIGH
24-HR
SGROUP# 1

*** Fugitive Emissions -- 1984 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 87.57189 AND OCCURRED AT (100.0, 200.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	3.58443C(237, 1)	1.99068 (183, 1)	1.31651 (66, 1)
340.0 /	2.46138C(182, 1)	1.57144C(192, 1)	.99621C(218, 1)
330.0 /	3.51632 (145, 1)	1.76350C(110, 1)	1.12944 (126, 1)
320.0 /	5.25113C(106, 1)	3.01624C(55, 1)	2.09798C(55, 1)
310.0 /	4.84113C(203, 1)	2.88076C(141, 1)	1.87403C(141, 1)
300.0 /	5.31561C(366, 1)	3.59661 (126, 1)	2.66720 (126, 1)
290.0 /	7.25035 (199, 1)	4.04481 (199, 1)	2.88349C(64, 1)
280.0 /	7.53823C(215, 1)	4.07144C(302, 1)	2.95693C(345, 1)
270.0 /	7.25877 (42, 1)	4.17737C(192, 1)	2.85971C(78, 1)
260.0 /	8.84026C(198, 1)	5.49456C(239, 1)	3.94842C(239, 1)
250.0 /	12.59844C(308, 1)	7.40707C(308, 1)	4.93378C(308, 1)
240.0 /	13.00146C(8, 1)	6.71186 (280, 1)	4.34889 (268, 1)
230.0 /	10.21048 (282, 1)	5.84186C(279, 1)	4.18594C(279, 1)
220.0 /	6.86684 (299, 1)	3.79932 (299, 1)	2.35211 (282, 1)
210.0 /	5.20503 (284, 1)	2.75397 (284, 1)	1.64206C(38, 1)
200.0 /	5.02882 (2, 1)	3.06816C(354, 1)	2.04385C(334, 1)
190.0 /	6.37175 (2, 1)	3.40845 (2, 1)	2.09446 (2, 1)
180.0 /	7.03769C(344, 1)	3.84775C(3, 1)	2.51089 (317, 1)
170.0 /	3.96433C(333, 1)	2.40480C(343, 1)	1.75971C(333, 1)
160.0 /	3.80000C(76, 1)	2.19124C(76, 1)	1.48803C(76, 1)
150.0 /	5.18083C(7, 1)	3.42967C(4, 1)	2.66995C(4, 1)
140.0 /	5.98922C(7, 1)	4.08318C(7, 1)	2.60160C(244, 1)
130.0 /	8.12296C(98, 1)	4.80703C(98, 1)	3.44292C(223, 1)
120.0 /	8.03453C(254, 1)	4.89576C(254, 1)	3.04053 (90, 1)
110.0 /	6.44986C(174, 1)	3.08605C(224, 1)	1.87528 (36, 1)
100.0 /	4.00599C(255, 1)	2.93588C(45, 1)	2.19022C(255, 1)
90.0 /	4.92617 (177, 1)	2.71569C(112, 1)	2.05668C(224, 1)
80.0 /	3.47543 (175, 1)	2.12109C(85, 1)	1.63629C(85, 1)
70.0 /	3.59760 (180, 1)	1.99097 (180, 1)	1.22693 (180, 1)
60.0 /	4.90108C(274, 1)	2.94271C(274, 1)	1.93342C(248, 1)
50.0 /	5.98193C(274, 1)	4.12248 (181, 1)	2.94027 (181, 1)
40.0 /	4.65175C(6, 1)	2.84420C(226, 1)	1.91964C(6, 1)
30.0 /	4.00940 (125, 1)	2.36348 (113, 1)	1.63205 (125, 1)
20.0 /	4.53493C(85, 1)	2.36989C(85, 1)	1.58226C(85, 1)

10.0 /	4.84868C(85, 1)	2.65166C(346, 1)	1.49186C(346, 1)
360.0 /	3.65661C(337, 1)	2.48137 (126, 1)	1.54670 (126, 1)

RUN ENDED ON 09-08-90 AT 08:40:07

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-49

ISC-ST MODEL RUN

FOR

1986 FOR FUGITIVE EMISSIONS

1 ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)

SERIAL NUMBER 5958 SOLD TO ICF TECHNOLOGY, INC
RUN BEGAN ON 09-08-90 AT 08:40:10

1

*** Fugitive Emissions -- 1986 Met Data ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) = 1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) = 4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) = 1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) = 0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) = 0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) = 1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION) WITH THE FOLLOWING TIME PERIODS:	
HOURLY (YES=1,NO=0)	ISW(7) = 1
2-HOUR (YES=1,NO=0)	ISW(8) = 0
3-HOUR (YES=1,NO=0)	ISW(9) = 1
4-HOUR (YES=1,NO=0)	ISW(10) = 0
6-HOUR (YES=1,NO=0)	ISW(11) = 0
8-HOUR (YES=1,NO=0)	ISW(12) = 1
12-HOUR (YES=1,NO=0)	ISW(13) = 0
24-HOUR (YES=1,NO=0)	ISW(14) = 1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) = 1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE SPECIFIED BY ISW(7) THROUGH ISW(14):	
DAILY TABLES (YES=1,NO=0)	ISW(16) = 0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) = 1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) = 0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) = 1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) = 0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) = 1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) = 1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) = 0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) = 1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) = 2
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) = 1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) = 1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) = 1
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) = 2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) = 2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) = 0
NUMBER OF INPUT SOURCES	NSOURC = 10
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP = 0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD = 0

NUMBER OF X (RANGE) GRID VALUES	NXPNTS = 8
NUMBER OF Y (THETA) GRID VALUES	NYPNTS = 36
NUMBER OF DISCRETE RECEPTORS	NXWYPT = 0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR = 10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET = 9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY = .000000E+00
SURFACE STATION NO.	ISS = 12842
YEAR OF SURFACE DATA	ISY = 86
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 86
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 9538 WORDS

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*** Fugitive Emissions -- 1986 Met Data ***

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY WIND SPEED CATEGORY

CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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*** Fugitive Emissions -- 1986 Met Data ***

X,Y-COORDINATES OF THE CENTER OF THE POLAR RECEPTOR GRID (METERS) = (0., 0.)

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

100.0, 200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

360.0,	10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,
100.0,	110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,
200.0,	210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,
300.0,	310.0,	320.0,	330.0,	340.0,	350.0,				

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*** Fugitive Emissions -- 1986 Met Data ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	.36500E-01	.0	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
2	0	0	0	.36500E-01	91.4	91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
3	0	0	0	.36500E-01	-91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
4	0	0	0	.36500E-01	.0	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
5	0	0	0	.36500E-01	91.4	.0	.0	3.00	294.26	.10	.01	.00	.00	.00
6	0	0	0	.36500E-01	-182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
7	0	0	0	.36500E-01	-91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
8	0	0	0	.36500E-01	.0	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
9	0	0	0	.36500E-01	91.4	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00
10	0	0	0	.36500E-01	182.8	-91.4	.0	3.00	294.26	.10	.01	.00	.00	.00

* CALM HOURS (=1) FOR DAY 1 * 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 1 1 0 0

* CALM HOURS (=1) FOR DAY	2 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	3 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	5 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	12 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	13 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	14 *	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY	15 *	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	20 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	21 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
* CALM HOURS (=1) FOR DAY	22 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY	24 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	25 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY	26 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	28 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY	29 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY	30 *	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	31 *	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY	33 *	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	38 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
* CALM HOURS (=1) FOR DAY	39 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY	40 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	44 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY	48 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY	49 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	52 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	53 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	54 *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	56 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	57 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	59 *	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	60 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	61 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	62 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	64 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY	65 *	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	67 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	70 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY	73 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	74 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	76 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY	83 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	86 *	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	87 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	90 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	91 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	92 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	93 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	94 *	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	96 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	97 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY	98 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY	101 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 102 *	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 103 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 104 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 105 *	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 108 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 113 *	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 114 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 115 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 116 *	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 117 *	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 118 *	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 119 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 120 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 121 *	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 123 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 127 *	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 128 *	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 129 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 131 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 132 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 135 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 137 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 140 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 141 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 142 *	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 143 *	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 144 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 145 *	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 150 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 153 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 154 *	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 155 *	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 157 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 158 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 159 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 160 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 161 *	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 162 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 163 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 164 *	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 165 *	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 166 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 168 *	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 170 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 171 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
* CALM HOURS (=1) FOR DAY 172 *	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 173 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 174 *	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 175 *	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 176 *	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 177 *	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0
* CALM HOURS (=1) FOR DAY 178 *	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 179 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 180 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 181 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 188 *	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 189 *	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 190 *	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 191 *	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 193 *	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 194 *	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 195 *	1	1	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 196 *	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 197 *	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 198 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 199 *	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 200 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 203 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 204 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 205 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 206 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 207 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 208 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 209 *	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 210 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 211 *	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 213 *	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 214 *	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 215 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 217 *	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 219 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 220 *	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 221 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
* CALM HOURS (=1) FOR DAY 225 *	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 226 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 227 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
* CALM HOURS (=1) FOR DAY 228 *	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 229 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 230 *	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 231 *	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 233 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 234 *	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 235 *	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
* CALM HOURS (=1) FOR DAY 236 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 237 *	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 238 *	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 239 *	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 240 *	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 241 *	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 243 *	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 244 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 245 *	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 246 *	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 247 *	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* CALM HOURS (=1) FOR DAY 248 *	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 249 *	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 250 *	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 251 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 252 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
* CALM HOURS (=1) FOR DAY 254 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 255 *	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 256 *	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1
* CALM HOURS (=1) FOR DAY 257 *	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 264 *	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 265 *	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 266 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 267 *	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 270 *	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 271 *	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 274 *	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 275 *	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 276 *	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 277 *	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
* CALM HOURS (=1) FOR DAY 278 *	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 279 *	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 281 *	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
* CALM HOURS (=1) FOR DAY 282 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
* CALM HOURS (=1) FOR DAY 283 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
* CALM HOURS (=1) FOR DAY 284 *	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
* CALM HOURS (=1) FOR DAY 285 *	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
* CALM HOURS (=1) FOR DAY 286 *	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 287 *	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 288 *	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 293 *	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
* CALM HOURS (=1) FOR DAY 297 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 300 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
* CALM HOURS (=1) FOR DAY 301 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 309 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
* CALM HOURS (=1) FOR DAY 316 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 320 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
* CALM HOURS (=1) FOR DAY 323 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
* CALM HOURS (=1) FOR DAY 324 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 329 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
* CALM HOURS (=1) FOR DAY 333 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 335 *	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 343 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
* CALM HOURS (=1) FOR DAY 349 *	0'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
* CALM HOURS (=1) FOR DAY 350 *	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 351 *	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
* CALM HOURS (=1) FOR DAY 353 *	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 354 *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 358 *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* CALM HOURS (=1) FOR DAY 359 *	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
* CALM HOURS (=1) FOR DAY 364 *	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0

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'N'-DAY
365 DAYS

*** Fugitive Emissions -- 1986 Met Data ***

* 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.88212 AND OCCURRED AT (100.0, 230.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0	1000.0	1500.0	2000.0
350.0 /	18.44008	7.54734	3.42893	2.13310	1.43922	.43091	.22597	.14287
340.0 /	20.79632	8.41924	3.98289	2.35545	1.64037	.49547	.25304	.15898
330.0 /	21.38015	9.70028	4.69286	2.67959	1.83501	.57731	.31613	.20397
320.0 /	21.40055	10.68641	5.70506	3.53771	2.31903	.69412	.35119	.21423
310.0 /	23.42726	11.13032	6.58080	4.34202	3.09952	.94693	.49354	.31236
300.0 /	25.10885	12.81423	7.50802	5.09975	3.67058	1.32251	.72411	.46876
290.0 /	24.99790	14.67875	9.05562	5.84755	4.14806	1.34205	.68795	.42720
280.0 /	24.10140	16.56221	9.29537	6.31848	4.51928	1.25289	.63189	.39481
270.0 /	23.04177	19.35670	11.78082	7.14792	4.59974	1.37033	.70306	.44448
260.0 /	24.83422	22.37412	13.53178	7.91722	5.26727	1.39576	.71486	.44995
250.0 /	27.30664	22.59851	15.19822	8.69379	5.73420	1.72606	.89388	.56522
240.0 /	27.44260	19.99017	16.59386	9.43414	6.06280	1.77661	.90122	.55897
230.0 /	27.88212	22.50566	11.58125	7.33867	5.08406	1.53131	.77675	.47774
220.0 /	27.26894	16.89223	8.68136	5.31234	3.52602	1.00593	.51993	.31903
210.0 /	27.47507	15.31426	6.51671	3.85230	2.37662	.55537	.25853	.15297
200.0 /	25.33073	11.97421	5.32889	3.03790	1.84756	.43555	.21355	.13290
190.0 /	23.31704	10.85867	4.60559	2.46345	1.55215	.45805	.24010	.15444
180.0 /	17.56775	10.65516	4.16799	2.12799	1.44885	.41623	.21793	.13589
170.0 /	20.73561	9.01798	3.82079	2.05628	1.34319	.33154	.15407	.09204
160.0 /	23.71324	10.42339	3.97090	2.18367	1.36502	.32888	.15789	.09831
150.0 /	22.97093	11.18220	4.33882	2.40434	1.57202	.44803	.22449	.14022
140.0 /	22.31700	11.89496	4.91343	2.81365	1.91870	.60719	.30604	.19325
130.0 /	19.36975	13.41351	5.49242	3.49862	2.35364	.68249	.34625	.21739
120.0 /	19.30950	10.01463	6.61712	3.50529	2.24735	.61328	.30795	.19207
110.0 /	18.24985	11.47035	5.49917	2.82715	1.81116	.50210	.25261	.15608
100.0 /	15.07857	10.49129	4.84153	2.45208	1.58625	.36858	.17607	.10647
90.0 /	13.57192	9.58243	4.63719	2.41954	1.44553	.36004	.17931	.11359
80.0 /	14.96495	8.31719	3.94338	2.25732	1.48719	.36625	.17617	.10416
70.0 /	15.46213	7.97828	3.89846	2.30137	1.58699	.43050	.20744	.12419
60.0 /	15.54409	7.98541	4.10293	2.36648	1.63727	.48860	.23794	.14734
50.0 /	15.86735	8.55031	4.05532	2.33741	1.59995	.52087	.27746	.18101
40.0 /	19.48734	7.59739	3.69694	2.30401	1.57705	.42833	.21776	.13746
30.0 /	19.66579	7.47252	3.12269	1.90601	1.29691	.37961	.18779	.11682
20.0 /	21.90421	6.86039	3.12111	1.78604	1.18874	.33799	.16851	.10268
10.0 /	21.08809	6.79571	3.12061	1.82446	1.23367	.35641	.18266	.11422
360.0 /	14.31608	6.93088	3.27280	1.89826	1.31018	.40114	.20578	.12938

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	371.34010 (141, 1)	270.19540 (160, 2)	185.04820 (164,23)	143.14700 (41, 2)	112.42310 (41, 2)
340.0 /	458.51750 (10, 8)	286.18350 (208, 3)	224.15510 (276, 3)	142.71700 (334,22)	100.21930 (41, 1)
330.0 /	483.77360 (186,22)	386.95090 (161, 2)	267.01880 (163, 2)	141.41440 (163, 1)	105.14140 (163, 1)
320.0 /	429.49720 (168, 2)	268.97020 (197, 4)	182.07370 (181,24)	151.66160 (161, 2)	121.61100 (192,23)
310.0 /	418.91940 (161, 2)	268.96980 (334,22)	151.93080 (163, 1)	129.32210 (168, 2)	97.83036 (217, 6)
300.0 /	446.43730 (39,19)	337.55410 (168, 2)	211.27780 (192,23)	130.45220 (182, 1)	105.06430 (217, 6)
290.0 /	441.10830 (52, 3)	327.58660 (168,21)	225.73710 (168, 4)	148.78910 (197, 4)	115.79580 (175, 1)
280.0 /	371.33980 (197, 6)	401.02780 (196, 6)	208.90430 (170, 5)	148.44920 (223, 3)	117.50000 (223,21)
270.0 /	545.97800 (286, 4)	629.58030 (286, 4)	346.44210 (286, 4)	214.76500 (286, 4)	147.53820 (286, 4)
260.0 /	371.34000 (129,22)	335.21010 (154, 4)	316.12520 (242, 5)	344.66610 (200, 1)	274.27280 (238, 7)
250.0 /	352.08760 (263, 1)	353.02790 (286, 1)	523.88970 (281, 1)	219.76690 (172, 1)	151.48160 (335,24)
240.0 /	371.28180 (4, 7)	549.57900 (190, 6)	401.56230 (288,23)	252.91160 (247, 7)	170.92180 (153, 2)
230.0 /	429.49680 (303,21)	387.19760 (206, 1)	291.49700 (142,24)	217.10490 (291, 5)	185.85570 (247, 2)
220.0 /	429.49680 (173, 4)	361.82310 (284,21)	248.25160 (293,24)	179.85980 (294, 4)	132.96720 (294, 4)
210.0 /	522.13130 (235,19)	368.30020 (289, 3)	228.42510 (247, 2)	154.37510 (142,24)	107.18400 (294, 1)
200.0 /	493.87370 (257,19)	325.52820 (288,24)	295.86630 (289, 3)	159.60730 (91,23)	99.56929 (142,24)
190.0 /	487.18180 (190, 6)	292.32480 (44,21)	208.83230 (21, 2)	162.13150 (14, 6)	112.65790 (284,22)
180.0 /	496.39980 (282,21)	570.73040 (282,21)	311.47770 (282,21)	191.95790 (282,21)	131.26480 (282,21)
170.0 /	470.05340 (281, 1)	314.58700 (286,21)	225.29060 (157, 4)	203.74010 (289, 3)	147.92140 (282,21)
160.0 /	505.34840 (189,22)	353.02480 (168,23)	351.57180 (113, 4)	186.72110 (128,24)	120.49340 (21, 2)
150.0 /	481.89270 (351,18)	467.78250 (14, 6)	223.39080 (286,21)	133.91410 (284,23)	113.85150 (107,24)
140.0 /	367.43710 (76,19)	361.82300 (173, 4)	257.41700 (14, 6)	167.44910 (286,21)	129.91640 (107,24)
130.0 /	355.82200 (183, 4)	387.19760 (201, 1)	390.28520 (107,24)	222.58070 (227,23)	183.21730 (20,24)
120.0 /	362.61160 (331,19)	466.10870 (15, 2)	350.65710 (54,23)	206.29320 (97,22)	136.55540 (97,22)
110.0 /	408.78150 (236, 9)	345.74080 (175, 9)	438.56980 (15, 2)	181.18260 (230, 2)	152.78250 (230, 2)
100.0 /	348.52680 (206, 5)	377.16630 (163, 6)	316.12480 (183, 4)	304.96420 (59, 4)	271.69890 (3,22)
90.0 /	545.97800 (213, 4)	629.58020 (213, 4)	346.44210 (213, 4)	214.76500 (213, 4)	147.53550 (213, 4)
80.0 /	327.71120 (309,20)	401.02850 (228, 4)	206.18350 (183, 3)	146.83090 (309,20)	117.50000 (309,20)
70.0 /	458.25740 (1, 5)	325.52800 (190,22)	292.15080 (59, 4)	147.18680 (2,21)	115.40530 (52,24)
60.0 /	422.08710 (352, 4)	375.76990 (351,18)	223.38900 (183, 4)	157.10840 (52,24)	115.84590 (2,21)
50.0 /	429.49830 (331, 1)	394.37300 (321,19)	281.68250 (190,22)	190.04790 (191, 2)	143.76530 (191, 2)
40.0 /	418.90570 (231, 5)	289.66190 (191,23)	204.38800 (53,23)	168.72810 (231, 5)	129.76280 (231, 5)
30.0 /	359.90110 (310, 6)	514.36520 (206, 5)	267.01930 (231, 6)	149.00770 (231, 5)	88.05628 (53,23)
20.0 /	332.33420 (205, 2)	353.03250 (164,23)	337.51420 (30, 2)	138.09190 (50, 3)	121.83850 (353,22)
10.0 /	371.34000 (353,22)	400.90730 (276, 3)	225.30180 (141, 1)	204.83710 (159,24)	110.72550 (353,22)
360.0 /	408.29960 (321,22)	470.78310 (321,22)	259.01700 (321,22)	160.56020 (321,22)	110.28560 (321,22)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	47.00689 (41, 2)	33.81470 (207, 5)	27.01135 (41, 2)
340.0 /	67.18026 (204, 6)	57.31188 (204, 6)	48.35616 (204, 6)
330.0 /	67.13953 (321, 7)	49.67677 (321, 7)	37.98081 (321, 7)
320.0 /	52.12032 (353, 4)	36.27763 (163, 2)	28.25499 (168, 2)
310.0 /	71.35768 (217, 6)	48.53827 (217, 6)	35.34499 (217, 6)
300.0 /	77.20925 (217, 6)	58.92894 (217, 6)	44.27466 (217, 6)
290.0 /	58.00766 (121, 2)	40.28788 (189,21)	31.28842 (189,21)
280.0 /	54.74670 (223,21)	42.22206 (223, 3)	32.79879 (223, 3)
270.0 /	75.42522 (274,24)	44.74763 (199, 2)	35.04828 (199, 2)
260.0 /	80.01579 (281, 1)	47.79831 (221, 7)	35.23217 (175, 3)
250.0 /	67.53719 (154, 4)	46.59398 (169, 5)	35.51416 (169, 5)
240.0 /	70.98037 (206, 1)	47.73041 (39, 1)	35.61020 (39, 1)
230.0 /	65.51091 (31,22)	46.01254 (303,21)	34.60542 (150,22)
220.0 /	56.91033 (244, 1)	41.67293 (294, 4)	32.37803 (244, 1)
210.0 /	51.12759 (294, 2)	37.91954 (33,22)	30.13383 (33,22)
200.0 /	44.27726 (44,21)	34.20379 (44,21)	26.91702 (44,21)
190.0 /	47.72436 (157, 4)	33.64651 (157, 4)	27.00040 (157, 4)
180.0 /	46.00598 (282,21)	33.27689 (282,21)	26.82433 (282,21)
170.0 /	45.93158 (21, 2)	33.59576 (128,24)	26.29566 (128,24)
160.0 /	46.98000 (33, 2)	33.76290 (286,21)	27.90641 (59, 9)
150.0 /	46.57336 (107,24)	34.94890 (66, 6)	28.32359 (66, 6)
140.0 /	54.88004 (286,20)	38.69062 (227,23)	28.48783 (227,23)
130.0 /	60.25230 (55, 1)	38.19157 (64, 1)	30.36723 (64, 1)
120.0 /	60.51303 (38,21)	41.95324 (38,21)	31.99240 (38,21)
110.0 /	66.95844 (212,24)	44.67031 (212,24)	33.82214 (351,21)
100.0 /	46.81214 (212,23)	35.68077 (212,23)	25.65725 (213, 1)
90.0 /	56.93813 (182,23)	47.31643 (59, 4)	33.75756 (3,22)
80.0 /	54.95945 (309,20)	40.94923 (309,20)	33.40785 (309,20)
70.0 /	50.82402 (183, 4)	38.31896 (183, 4)	29.02924 (183, 4)
60.0 /	62.07940 (183, 2)	42.88172 (183, 2)	31.18076 (183, 2)
50.0 /	65.18825 (191, 2)	44.15961 (191, 2)	31.95053 (191, 2)
40.0 /	58.05865 (231, 5)	41.88356 (231, 5)	32.38603 (231, 5)
30.0 /	38.61080 (53,23)	28.30014 (191,23)	21.80871 (191,22)
20.0 /	61.30241 (63, 7)	50.24839 (63, 7)	41.54292 (63, 7)
10.0 /	49.56039 (206, 5)	33.91226 (353,22)	27.23157 (353,22)
360.0 /	43.16275 (354, 7)	32.61779 (159,24)	23.05131 (159,24)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	371.34010 (161,22)	250.68820 (79, 3)	173.98100 (207, 5)	141.08850 (207, 5)	110.72530 (141, 1)
340.0 /	458.25740 (187, 7)	251.11960 (163, 1)	199.46030 (164, 2)	133.90270 (41, 1)	100.20050 (226, 3)
330.0 /	417.25670 (257,19)	386.95090 (167, 3)	267.01880 (193,21)	141.41440 (217, 2)	105.14140 (217, 2)
320.0 /	386.26080 (163, 2)	268.97020 (226, 6)	182.07370 (240, 6)	151.66160 (167, 3)	102.10400 (206, 6)
310.0 /	418.91940 (167, 3)	253.53180 (286, 1)	151.93080 (217, 2)	105.85690 (161, 2)	94.34502 (163, 2)
300.0 /	409.16260 (153, 3)	328.56650 (199, 2)	170.78160 (177, 1)	130.45220 (194,24)	95.18341 (181,24)
290.0 /	371.60820 (352, 4)	302.59750 (3, 7)	225.73710 (194, 3)	148.78910 (226, 6)	115.79580 (288, 4)
280.0 /	371.33980 (274, 7)	401.02780 (266, 3)	208.90430 (239,24)	148.44920 (267, 2)	117.50000 (233,24)
270.0 /	545.97800 (286,23)	629.58030 (286,23)	346.44210 (286,23)	214.76500 (286,23)	147.53820 (286,23)
260.0 /	371.34000 (245, 6)	335.21010 (279,24)	316.12520 (276, 2)	344.66610 (286,22)	274.27280 (243, 4)
250.0 /	347.41610 (352, 4)	342.90990 (170, 5)	518.03140 (190, 6)	219.76690 (284, 7)	150.52960 (326, 2)
240.0 /	351.85260 (189,20)	532.96560 (281, 1)	397.78310 (331,21)	252.91160 (273, 7)	170.92180 (172,23)
230.0 /	418.90590 (150,22)	387.19760 (251, 2)	282.52220 (15,21)	210.13130 (293,24)	185.85570 (247, 3)
220.0 /	418.90620 (244, 1)	343.63340 (176, 4)	244.98780 (288,24)	173.17000 (291, 5)	129.66960 (244, 1)
210.0 /	522.13130 (257, 8)	363.16160 (150,22)	228.42510 (247, 3)	153.45900 (15,21)	106.93070 (7, 6)
200.0 /	486.88510 (165,24)	305.44760 (294, 7)	219.70090 (294, 2)	152.57940 (301, 2)	99.24551 (15,21)
190.0 /	465.31840 (136, 4)	276.57250 (85,24)	203.52940 (279,22)	154.25900 (113, 4)	110.72550 (157, 4)
180.0 /	496.39940 (284,22)	570.73000 (284,22)	311.47740 (284,22)	191.95680 (284,22)	131.24400 (284,22)
170.0 /	432.39310 (190, 6)	299.31970 (176, 4)	222.56690 (301, 2)	151.48930 (142,22)	113.79880 (284,22)
160.0 /	505.34840 (220,24)	338.54980 (289, 1)	337.22440 (67, 3)	186.72110 (323,23)	119.37100 (279,22)
150.0 /	444.23040 (280, 7)	456.25490 (113, 4)	222.29570 (20,24)	128.99350 (107,24)	83.47649 (279,22)
140.0 /	352.07040 (248,21)	349.25260 (142,23)	231.07670 (113, 4)	165.02560 (119,24)	110.11960 (227,23)
130.0 /	337.53580 (179, 9)	376.29490 (158, 7)	292.05100 (248,23)	216.48490 (364, 5)	177.45640 (284,21)
120.0 /	359.90080 (182, 7)	410.96720 (297,19)	303.83870 (64, 1)	204.59390 (118, 4)	132.95300 (201, 1)
110.0 /	345.79660 (126,22)	297.44890 (167,17)	387.34030 (297,19)	177.31680 (54, 7)	152.58930 (171,23)
100.0 /	343.59640 (251,11)	332.21950 (212,24)	275.94110 (228, 4)	213.26230 (182,23)	270.50800 (13, 1)
90.0 /	465.10230 (3,22)	542.68510 (3,22)	305.55680 (3,22)	189.89780 (3,22)	130.43100 (3,22)
80.0 /	320.37480 (195,10)	387.79240 (183, 4)	201.95830 (2,20)	123.01810 (321,21)	110.05060 (213, 4)
70.0 /	410.52290 (4, 7)	325.52800 (343,19)	225.73710 (191, 3)	142.28520 (182,23)	105.68740 (309,20)
60.0 /	415.02740 (48,19)	372.04940 (182,23)	211.27800 (70,20)	134.36780 (191, 2)	105.86750 (52,24)
50.0 /	355.84130 (143, 9)	394.37300 (323, 6)	281.68250 (343,19)	190.04790 (334,21)	143.76530 (334,21)
40.0 /	386.25910 (231, 6)	273.03700 (354, 8)	204.07300 (231, 5)	159.92020 (331, 1)	121.58850 (70,20)
30.0 /	350.80520 (334,22)	407.18430 (39,19)	199.63460 (323, 5)	116.74340 (122, 5)	85.35268 (49,24)
20.0 /	332.33420 (205, 3)	311.91220 (53,23)	265.60580 (48,23)	130.47170 (353,22)	91.08689 (225,22)
10.0 /	360.97040 (70,20)	366.66940 (164, 2)	225.30180 (161,22)	203.16180 (354, 7)	108.96400 (321,22)
360.0 /	379.98550 (353, 4)	426.77740 (171, 3)	232.87610 (171, 3)	143.51090 (171, 3)	109.11570 (41, 2)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 629.58030 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	46.93238 (141, 1)	33.59161 (41, 2)	26.42562 (207, 5)
340.0 /	47.29625 (176, 5)	34.01288 (335, 6)	27.31909 (335, 6)
330.0 /	50.12016 (208; 3)	34.58893 (205, 2)	27.81805 (205, 2)
320.0 /	51.05585 (240, 1)	36.27763 (193,21)	26.55616 (163, 2)
310.0 /	47.56172 (182, 1)	35.25587 (161, 2)	28.55614 (161, 2)
300.0 /	52.03748 (144, 5)	37.65559 (144, 5)	29.58911 (153, 3)
290.0 /	57.68465 (189,21)	40.28788 (198, 5)	31.28842 (198, 5)
280.0 /	54.74670 (233,24)	42.22206 (267, 2)	32.79879 (267, 2)
270.0 /	75.42522 (283,22)	44.74763 (310, 1)	35.04828 (310, 1)
260.0 /	79.75652 (59,22)	47.79831 (260, 2)	35.14719 (317, 4)
250.0 /	67.53719 (279,24)	46.59398 (199,21)	35.51416 (199,21)
240.0 /	70.98037 (251, 2)	47.72385 (105, 6)	35.60685 (105, 6)
230.0 /	65.50143 (337,21)	45.26706 (150,22)	34.60542 (161,24)
220.0 /	56.77923 (294, 4)	41.33535 (244, 1)	32.34433 (293, 6)
210.0 /	50.64958 (176, 4)	37.57159 (176, 4)	29.19299 (176, 4)
200.0 /	43.83652 (85,24)	28.20279 (85,24)	21.17140 (22,21)
190.0 /	43.10634 (301, 2)	31.78250 (301, 2)	25.19700 (301, 2)
180.0 /	44.18896 (284,22)	31.95061 (289, 3)	24.00468 (284,22)
170.0 /	44.91276 (14, 6)	33.59576 (323,23)	26.29566 (323,23)
160.0 /	42.87904 (286,21)	32.41233 (59, 9)	27.39277 (286,21)
150.0 /	45.79097 (66, 6)	32.20175 (142,23)	26.56713 (142,23)
140.0 /	49.96875 (227,23)	38.61458 (364, 5)	28.44945 (364, 5)
130.0 /	60.21899 (20, 2)	34.81037 (55, 1)	24.62332 (54,23)
120.0 /	59.88752 (21,20)	41.41683 (21,20)	31.39323 (21,20)
110.0 /	66.84776 (351,20)	44.62955 (351,20)	33.79828 (47,22)
100.0 /	37.46349 (112, 6)	31.48522 (213, 1)	22.66820 (96,21)
90.0 /	54.45501 (47,21)	39.87610 (3,22)	33.74187 (13, 1)
80.0 /	53.15743 (183, 3)	31.12281 (3,21)	21.60870 (3,21)
70.0 /	47.35747 (228, 4)	33.08597 (228, 4)	24.69349 (181,21)
60.0 /	59.89674 (191, 3)	36.90598 (321,19)	27.79859 (321,19)
50.0 /	65.18825 (334,21)	44.15961 (334,21)	31.95053 (334,21)
40.0 /	55.79136 (231, 6)	37.91445 (231, 6)	25.68479 (231, 6)
30.0 /	37.95245 (191,22)	28.28234 (354, 8)	21.80871 (203, 2)
20.0 /	45.28069 (4,24)	34.58172 (4,24)	25.79584 (4,24)
10.0 /	47.85430 (353,22)	25.43554 (321,23)	20.54254 (321,23)
360.0 /	38.06226 (159,24)	29.90062 (354, 7)	20.90353 (30, 2)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 348.09640 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	225.09530 (238, 5)	156.51920 (160, 1)	94.06078 (141, 1)	72.93787 (41, 1)	65.40736 (41, 1)
340.0 /	214.19930 (187, 3)	178.06350 (163, 1)	104.75360 (151, 1)	74.85478 (164, 1)	57.17349 (164, 1)
330.0 /	227.58930 (205, 1)	197.81680 (71, 1)	128.28600 (163, 1)	91.34792 (163, 1)	61.53062 (163, 1)
320.0 /	228.69740 (281, 1)	151.23120 (273, 1)	95.84450 (168, 1)	79.14720 (208, 1)	54.11581 (205, 1)
310.0 /	218.45100 (263, 2)	161.14020C(286, 1)	111.18140 (273, 1)	73.02748 (150, 2)	51.32975 (71, 1)
300.0 /	226.85250 (153, 1)	224.28790 (310, 1)	113.55090 (267, 1)	89.53384 (167, 1)	63.51748 (272, 8)
290.0 /	234.53020 (257, 1)	161.56310 (59, 8)	159.15990 (310, 1)	106.63030 (273, 1)	86.47437 (273, 1)
280.0 /	214.50430 (260, 8)	285.73040 (272, 1)	125.98770 (197, 2)	97.09783C(286, 1)	71.92222C(286, 1)
270.0 /	252.85100 (311, 2)	286.38610 (311, 2)	155.95370 (311, 2)	105.38820 (219, 1)	82.12707 (34, 1)
260.0 /	223.01010 (273, 8)	187.23750 (283, 2)	207.59780 (257, 1)	143.27300 (286, 8)	119.39240 (311, 2)
250.0 /	222.24370 (272, 8)	221.23190C(286, 1)	347.83250 (59, 8)	163.13570 (32, 1)	101.92440 (272, 2)
240.0 /	184.16660 (273, 1)	348.09640 (59, 8)	246.04740 (21, 2)	132.63790 (296, 2)	108.11200 (296, 2)
230.0 /	265.80150 (21, 2)	227.33160 (261, 1)	199.73530 (294, 1)	144.44930 (294, 2)	140.37790 (294, 2)
220.0 /	337.81080 (294, 2)	212.01090 (259, 2)	159.54330 (294, 2)	125.40160 (294, 2)	96.87122 (294, 2)
210.0 /	257.02680 (165, 7)	215.36570 (331, 7)	166.07860 (294, 2)	83.63214 (142, 8)	70.06934 (294, 1)
200.0 /	243.85140 (320, 3)	172.38600 (294, 3)	131.28880 (289, 1)	93.90438 (294, 1)	65.25833 (113, 2)
190.0 /	248.39470 (59, 8)	150.70900C(349, 8)	121.91560 (21, 1)	113.87630 (113, 2)	69.29242 (113, 2)
180.0 /	304.20660 (59, 8)	234.43150 (307, 7)	146.19610 (15, 7)	80.71588 (307, 7)	85.01220 (21, 1)
170.0 /	293.77480 (59, 8)	175.29270 (64, 1)	127.80700 (21, 1)	76.73447 (142, 8)	66.76477 (21, 1)
160.0 /	229.06210 (312, 2)	200.21870 (289, 2)	126.68930 (14, 2)	79.92290 (21, 1)	47.73543 (21, 1)
150.0 /	260.23240 (165, 7)	223.41500 (64, 1)	123.37930C(20, 8)	77.42834 (116, 8)	54.26556 (107, 8)
140.0 /	185.90060C(59, 2)	255.67900 (294, 2)	124.36630 (196, 8)	95.87786 (286, 7)	71.67375 (54, 8)
130.0 /	220.59010 (41, 3)	197.58210 (201, 1)	192.40340 (107, 8)	119.20350 (196, 8)	104.68880C(20, 8)
120.0 /	201.64770 (273, 1)	167.04290C(20, 8)	193.43600 (64, 1)	133.13000 (200, 8)	88.42900 (200, 8)
110.0 /	225.02870 (303, 3)	189.56770 (322, 8)	146.18990 (15, 1)	102.13720 (112, 2)	81.51015 (351, 7)
100.0 /	191.56250 (190, 8)	227.97400 (351, 7)	187.46900 (183, 2)	101.65470C(59, 2)	90.56631 (3, 8)
90.0 /	228.40220 (3, 8)	218.66480C(13, 1)	139.37350 (190, 8)	78.48294 (3, 7)	65.66112 (322, 8)
80.0 /	164.72450 (183, 2)	205.54590 (183, 2)	114.48540 (2, 7)	76.49844 (183, 1)	71.90723 (183, 1)
70.0 /	188.10340 (66, 1)	224.85040 (190, 8)	134.72330 (183, 1)	95.47186 (191, 1)	58.79011 (3, 7)
60.0 /	301.57590 (183, 1)	213.16670C(231, 2)	131.00980 (62, 1)	110.89530 (191, 1)	82.99551 (191, 1)
50.0 /	249.67770 (351, 7)	287.00130 (183, 1)	205.14790 (190, 8)	123.70530 (190, 8)	88.22682 (190, 8)
40.0 /	268.38830C(231, 2)	249.27450 (191, 8)	131.50990 (203, 1)	97.50923 (203, 1)	73.83553 (54, 1)
30.0 /	163.12220 (191, 8)	245.35940C(30, 1)	142.90910C(231, 2)	95.81118 (54, 1)	65.47972 (14, 8)
20.0 /	243.06490 (205, 1)	169.32940C(164, 8)	166.20320C(30, 1)	100.00390 (50, 1)	60.54927 (50, 1)
10.0 /	208.57140 (70, 7)	187.71510 (151, 1)	137.01080C(30, 2)	110.34300 (159, 8)	69.80861 (159, 8)
360.0 /	192.27420 (36, 7)	225.27050 (36, 7)	127.65300 (36, 7)	77.50102 (36, 7)	61.80435 (321, 8)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 348.09640 AND OCCURRED AT (200.0, 240.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	24.89870C(30, 2)	18.35139C(30, 2)	14.23734C(30, 2)
340.0 /	34.04472 (164, 1)	21.73179 (204, 2)	17.93347 (204, 2)
330.0 /	37.35353 (205, 1)	26.75805 (205, 1)	20.16023 (205, 1)
320.0 /	32.20268 (163, 1)	23.58493 (163, 1)	16.69418 (163, 1)
310.0 /	25.52813 (217, 2)	17.55917 (71, 1)	14.22506 (71, 1)
300.0 /	38.65004 (272, 8)	24.70917 (272, 8)	18.58251 (272, 8)
290.0 /	37.63934 (257, 1)	26.77560 (257, 1)	20.03502 (257, 1)
280.0 /	36.30994 (126, 1)	27.95321C(286, 1)	20.55202C(286, 1)
270.0 /	38.53054 (286, 8)	26.51819 (173, 8)	17.53477 (173, 8)
260.0 /	53.73577 (59, 8)	28.79913 (273, 8)	20.68991 (273, 8)
250.0 /	50.46600 (272, 2)	27.25065 (272, 2)	19.02694 (95, 2)
240.0 /	45.63800 (308, 1)	25.84855 (116, 2)	19.20879 (116, 2)
230.0 /	43.45941C(21, 8)	26.51518 (89, 1)	19.79845 (89, 1)
220.0 /	51.59257 (294, 2)	36.36596 (294, 2)	27.32825 (294, 2)
210.0 /	31.51416 (294, 1)	20.17782 (294, 1)	13.38319 (361, 8)
200.0 /	17.92134 (294, 1)	11.40126 (44, 7)	8.97234 (44, 7)
190.0 /	26.86220 (44, 1)	16.66441 (289, 2)	12.13520 (113, 2)
180.0 /	21.80872 (21, 1)	14.79263 (355, 2)	10.56788 (307, 7)
170.0 /	20.42054 (21, 1)	11.85329 (21, 1)	8.76522 (128, 8)
160.0 /	19.60693 (116, 8)	14.06483C(59, 3)	11.84463C(59, 3)
150.0 /	27.47998 (116, 8)	17.76485 (66, 2)	13.89859 (66, 2)
140.0 /	34.86397 (196, 8)	24.59526 (196, 8)	16.87650 (196, 8)
130.0 /	32.08546C(20, 1)	22.25065 (64, 1)	17.69066 (64, 1)
120.0 /	33.89482 (201, 1)	22.70794 (201, 1)	16.86598 (201, 1)
110.0 /	49.76925 (351, 7)	33.72711 (351, 7)	24.72327 (351, 7)
100.0 /	27.42429 (112, 2)	17.70191 (112, 2)	12.55879 (112, 1)
90.0 /	18.97946 (182, 8)	15.77214C(59, 2)	11.25252 (3, 8)
80.0 /	31.19854 (322, 8)	20.99243 (322, 8)	12.94599 (322, 8)
70.0 /	28.34984 (325, 1)	19.22626 (325, 1)	14.04019 (325, 1)
60.0 /	35.76118 (183, 1)	25.34903 (183, 1)	18.84031 (183, 1)
50.0 /	38.70377 (190, 8)	24.20572 (70, 7)	17.53883 (70, 7)
40.0 /	37.95000C(231, 2)	26.59933C(231, 2)	19.35694C(231, 2)
30.0 /	25.21758 (53, 8)	18.81824 (191, 8)	14.52520 (191, 8)
20.0 /	21.40861 (63, 3)	17.03368 (63, 3)	13.94749 (63, 3)
10.0 /	23.16407 (50, 1)	17.46799 (50, 1)	13.49274 (50, 1)
360.0 /	24.06725 (159, 8)	18.05691 (159, 8)	13.21951 (159, 8)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 283.97020 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	200.87840C(30, 2)	143.40590 (208, 1)	90.59194C(164, 8)	72.33925 (164, 1)	52.07434C(30, 2)
340.0 /	200.36830 (34, 3)	143.87690 (205, 1)	103.75680 (164, 1)	62.93379 (321, 2)	54.04158 (227, 2)
330.0 /	200.11890 (59, 8)	186.87220 (208, 1)	98.61229 (193, 7)	65.45303 (226, 1)	57.97043 (205, 1)
320.0 /	214.67850 (163, 1)	145.97640 (276, 1)	87.95348 (71, 1)	76.53230 (71, 1)	50.74808 (163, 1)
310.0 /	206.98510 (71, 1)	147.09540 (71, 1)	97.57464 (208, 1)	72.30196 (163, 1)	50.63765 (272, 8)
300.0 /	222.22320C(198, 1)	184.26570 (163, 1)	102.47300 (198, 2)	78.04632 (272, 1)	59.48121 (272, 1)
290.0 /	221.39340 (52, 1)	161.37100 (134, 1)	142.09230 (276, 1)	86.96921 (272, 7)	73.10574 (197, 2)
280.0 /	185.60290C(174, 2)	248.86090 (257, 1)	124.91320 (126, 1)	81.76839 (197, 2)	63.33947 (167, 2)
270.0 /	248.31370 (312, 2)	283.97020 (312, 2)	155.49730 (286, 8)	97.11655 (34, 1)	79.25583C(286, 1)
260.0 /	222.52670 (305, 2)	176.74890 (263, 2)	200.63230 (242, 2)	142.40980 (323, 8)	114.38150 (286, 8)
250.0 /	210.60380 (153, 1)	199.08440 (260, 8)	264.10280 (314, 2)	153.60510 (305, 2)	101.22500 (32, 1)
240.0 /	176.86500 (197, 2)	279.00180 (294, 2)	213.62210 (124, 2)	126.20530 (96, 2)	105.12360 (308, 1)
230.0 /	250.59830 (294, 1)	220.00740 (316, 3)	142.73400C(288, 8)	127.60320 (290, 8)	123.90380C(247, 1)
220.0 /	257.50640C(247, 1)	209.33960 (291, 2)	142.32070 (290, 8)	102.21610 (291, 2)	80.43344 (291, 2)
210.0 /	254.07360 (286, 8)	214.12070 (89, 1)	152.28340C(247, 1)	82.28690 (294, 2)	60.95604 (291, 2)
200.0 /	227.60160 (312, 2)	163.31770 (291, 1)	125.91640 (294, 1)	83.90903 (21, 1)	51.94357 (15, 7)
190.0 /	236.31020 (55, 3)	148.66920 (66, 2)	86.93845 (289, 2)	71.83311 (14, 2)	64.88109 (21, 1)
180.0 /	224.66520 (314, 2)	219.45370 (15, 7)	144.34410C(284, 8)	71.34113 (21, 1)	64.17990 (113, 2)
170.0 /	223.66550 (314, 2)	169.26600 (294, 1)	103.09330 (289, 2)	69.18912 (355, 2)	60.35095 (30, 8)
160.0 /	224.48560 (40, 3)	181.30880 (286, 7)	125.65620 (22, 7)	76.81873 (128, 8)	44.13719 (30, 8)
150.0 /	197.71640 (142, 8)	172.89680 (22, 7)	121.61810 (284, 7)	65.55469 (54, 8)	54.23808 (196, 8)
140.0 /	184.63980 (260, 8)	231.47880C(247, 1)	121.89170 (20, 7)	91.86897 (64, 1)	69.19788 (107, 8)
130.0 /	214.66040 (289, 2)	184.52710 (107, 8)	191.61080 (248, 8)	116.96870 (54, 8)	100.92810 (284, 7)
120.0 /	188.77910 (66, 8)	157.93250 (284, 7)	191.87900 (20, 7)	119.09430 (64, 7)	76.56999 (64, 7)
110.0 /	221.55310 (351, 7)	182.13750 (64, 7)	135.03870 (212, 8)	100.85890 (112, 1)	78.92673 (112, 1)
100.0 /	171.56580 (206, 2)	218.46250 (183, 1)	134.71890 (182, 8)	84.28726 (182, 8)	90.16933C(13, 1)
90.0 /	184.79770 (15, 1)	209.86010C(213, 2)	117.10910 (191, 1)	77.76943C(76, 7)	62.59091C(76, 7)
80.0 /	155.60330 (195, 4)	158.58490 (212, 7)	107.96970 (322, 8)	73.32039 (191, 1)	56.58622 (183, 2)
70.0 /	176.23180 (54, 2)	173.97870 (321, 7)	112.87040 (192, 2)	77.96583 (52, 8)	55.76170 (323, 1)
60.0 /	203.86900C(52, 3)	154.28570 (54, 1)	126.84340 (70, 7)	79.98028 (52, 8)	68.31689 (321, 7)
50.0 /	243.58040 (70, 7)	218.22340 (321, 7)	163.71240 (321, 7)	105.67430 (321, 7)	83.47650 (321, 7)
40.0 /	212.73360 (316, 3)	195.69740 (52, 7)	130.04170 (190, 8)	96.72734 (14, 8)	69.35800C(231, 2)
30.0 /	162.05420 (168, 6)	214.76790 (70, 7)	89.42795 (4, 8)	82.60298 (14, 8)	64.01084 (203, 1)
20.0 /	181.46860 (190, 8)	162.29950 (203, 1)	112.58470 (36, 7)	60.44902 (50, 2)	42.88126 (49, 7)
10.0 /	191.58970 (255, 4)	164.93000 (50, 1)	110.96450 (37, 1)	103.04260 (29, 8)	64.31129 (321, 8)
360.0 /	188.71240 (3, 8)	202.82760 (159, 8)	112.56040 (159, 8)	74.61464 (159, 8)	52.78873 (141, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 3-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 283.97020 AND OCCURRED AT (200.0, 270.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	22.21023 (37, 1)	16.62926C(164, 8)	12.92619 (37, 1)
340.0 /	26.35078 (204, 2)	18.53626 (164, 1)	12.85779 (164, 1)
330.0 /	24.28988 (346, 1)	17.16290 (346, 1)	12.66027 (321, 3)
320.0 /	19.68543 (344, 1)	13.02165 (139, 2)	10.08208 (139, 2)
310.0 /	22.16383 (71, 1)	16.54834 (217, 2)	11.89255 (217, 2)
300.0 /	38.29073 (275, 8)	24.28267 (275, 8)	18.01987 (217, 2)
290.0 /	34.56167 (273, 1)	22.40701C(121, 1)	17.27985C(121, 1)
280.0 /	36.18905C(286, 1)	20.60465 (223, 1)	15.93612 (223, 1)
270.0 /	37.37023 (274, 8)	26.40057 (286, 8)	17.36390 (286, 8)
260.0 /	46.86526 (314, 2)	26.21016 (305, 2)	20.26781 (305, 2)
250.0 /	39.34150 (95, 2)	25.82925 (95, 2)	17.04082C(135, 2)
240.0 /	42.58452 (296, 2)	24.94389 (308, 1)	16.35643 (308, 1)
230.0 /	42.09461 (21, 2)	25.93605 (21, 2)	17.52016 (21, 2)
220.0 /	37.40906 (291, 1)	22.91329 (290, 8)	16.99052C(247, 1)
210.0 /	26.99250 (291, 2)	17.51377 (361, 8)	13.09268 (294, 1)
200.0 /	16.83035 (85, 8)	10.35978 (59, 4)	8.88161 (59, 4)
190.0 /	24.18335 (113, 2)	15.65700 (12, 1)	11.71416 (289, 2)
180.0 /	20.17127 (355, 2)	13.76641 (14, 2)	10.23488 (355, 2)
170.0 /	17.84979 (14, 2)	11.19859 (128, 8)	8.76522 (323, 8)
160.0 /	16.90294 (308, 7)	12.43131 (116, 8)	9.42249 (116, 8)
150.0 /	24.21090 (66, 2)	13.46148 (107, 8)	10.07569 (115, 7)
140.0 /	27.78755 (284, 7)	18.83327 (284, 7)	13.79770 (284, 7)
130.0 /	29.03662 (64, 1)	20.49595C(20, 1)	14.14939C(20, 1)
120.0 /	31.50786C(21, 7)	20.86711C(21, 7)	14.87020C(21, 7)
110.0 /	37.91511 (59, 1)	24.99914 (59, 1)	18.21339 (59, 1)
100.0 /	24.54588 (112, 1)	16.11501 (112, 1)	12.27268 (112, 2)
90.0 /	18.31052 (202, 2)	13.29203 (3, 8)	11.24729C(13, 1)
80.0 /	26.83388 (183, 2)	13.64974C(309, 7)	11.13595C(309, 7)
70.0 /	27.51628 (183, 1)	17.64874 (323, 1)	12.71459 (323, 1)
60.0 /	35.52341 (191, 1)	17.30040 (321, 7)	11.54221 (212, 2)
50.0 /	36.26241 (70, 7)	19.49858 (321, 7)	14.49132 (61, 8)
40.0 /	29.32693 (14, 8)	19.10689 (54, 1)	14.45015 (54, 1)
30.0 /	24.99007 (191, 8)	13.90881 (37, 7)	10.28221 (37, 7)
20.0 /	21.08120 (4, 8)	15.78940 (4, 8)	11.78715 (4, 8)
10.0 /	20.64016 (49, 7)	15.09827 (49, 7)	10.93185 (49, 7)
360.0 /	22.75155 (29, 8)	13.48368 (36, 7)	10.62163 (36, 7)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 203.56100 AND OCCURRED AT (200.0, 280.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	132.00830C(189, 2)	106.42790C(208, 1)	61.56545C(30, 1)	60.07798C(30, 1)	38.12881C(30, 1)
340.0 /	145.27990C(235, 3)	105.12100C(205, 1)	61.41216 (36, 1)	55.90791C(164, 1)	43.96008C(164, 1)
330.0 /	145.47400C(205, 1)	116.08430C(208, 1)	78.09649C(163, 1)	45.70908C(163, 1)	33.85799C(163, 1)
320.0 /	152.79290C(163, 1)	91.79616C(276, 1)	59.74126C(168, 1)	52.18363C(205, 1)	34.28467 (344, 1)
310.0 /	165.53090 (263, 1)	102.89290 (71, 1)	57.57303C(208, 1)	45.99549C(205, 1)	34.21037C(29, 1)
300.0 /	157.19390C(275, 3)	117.52860C(168, 1)	80.86020C(288, 1)	53.34669C(257, 1)	45.14880C(257, 1)
290.0 /	183.97800C(267, 1)	132.75300C(3, 1)	122.82890C(276, 1)	65.19687C(257, 1)	48.05186C(267, 1)
280.0 /	133.59350C(288, 1)	203.56100C(257, 1)	80.84783C(257, 1)	61.94358C(288, 1)	58.28993C(288, 1)
270.0 /	125.39170C(286, 1)	152.95790C(286, 1)	111.64690C(3, 1)	77.94814C(286, 1)	67.76184C(286, 1)
260.0 /	165.75030C(3, 1)	145.67180C(175, 1)	155.32100C(257, 1)	84.63539C(175, 1)	64.09007C(137, 1)
250.0 /	161.74860 (263, 1)	170.09810C(286, 1)	173.35560 (136, 1)	131.52260 (32, 1)	87.10463 (32, 1)
240.0 /	138.32360C(33, 1)	171.61770 (136, 1)	160.63820 (89, 1)	97.66745C(33, 1)	70.47116C(96, 1)
230.0 /	172.80800C(257, 1)	198.98260 (261, 1)	121.98490 (294, 1)	101.02270 (294, 1)	81.59190C(247, 1)
220.0 /	159.95890 (294, 1)	146.13990 (291, 1)	123.36440 (294, 1)	98.47543 (294, 1)	76.71629 (294, 1)
210.0 /	172.25650 (280, 3)	135.04210 (89, 1)	105.82510 (291, 1)	72.43330 (294, 1)	55.54996 (294, 1)
200.0 /	140.62500C(286, 1)	126.07300C(33, 1)	70.67256 (294, 1)	57.76564 (294, 1)	37.45550 (294, 1)
190.0 /	138.15100C(349, 3)	92.85471C(349, 3)	78.90837C(349, 3)	63.92897C(113, 1)	39.60613C(113, 1)
180.0 /	139.16710C(284, 3)	142.14850C(284, 3)	85.89771C(284, 3)	38.44428 (289, 1)	36.69365C(113, 1)
170.0 /	124.05310 (59, 3)	91.46338C(64, 1)	67.46451 (12, 1)	41.55650 (337, 3)	28.57586C(117, 1)
160.0 /	138.54340 (40, 1)	138.81040 (289, 1)	78.17507C(14, 1)	31.60326 (128, 3)	24.82877 (279, 3)
150.0 /	147.01530 (165, 3)	114.94830C(64, 1)	77.41438C(284, 3)	45.69506C(284, 3)	32.34730 (54, 3)
140.0 /	119.01630C(284, 3)	123.69460 (294, 1)	80.37168C(20, 3)	56.11779 (54, 3)	39.98074 (54, 3)
130.0 /	145.08470 (289, 1)	109.33470 (201, 1)	101.63830 (248, 3)	87.30319C(20, 3)	76.88944C(20, 3)
120.0 /	124.15690C(2, 3)	106.62790 (196, 3)	128.63840C(141, 3)	77.95975 (200, 3)	49.25884 (200, 3)
110.0 /	140.15840 (303, 1)	95.06473C(64, 3)	90.97490 (212, 3)	76.12356 (112, 1)	56.78897 (112, 1)
100.0 /	104.47070 (289, 2)	124.27430C(351, 3)	91.29364 (183, 1)	60.16937C(59, 1)	56.26369C(213, 1)
90.0 /	127.88400C(213, 1)	144.88810C(213, 1)	80.73110 (3, 3)	53.21780 (3, 3)	37.40715C(226, 3)
80.0 /	116.49790 (183, 1)	119.34570 (183, 1)	78.95233C(231, 1)	58.11311 (183, 1)	51.48219 (183, 1)
70.0 /	102.82080C(38, 1)	111.57240 (190, 3)	74.46502 (183, 1)	54.16809 (183, 1)	39.94184 (183, 1)
60.0 /	142.82980C(52, 1)	130.18320C(231, 1)	82.60837 (183, 1)	56.28770 (323, 1)	42.27923 (323, 1)
50.0 /	142.16710C(351, 3)	124.26690 (323, 1)	90.03818 (321, 3)	56.54757C(62, 1)	42.90315C(62, 1)
40.0 /	140.56200C(231, 1)	137.41260 (52, 3)	91.44760C(159, 1)	68.90636 (203, 1)	43.91098 (53, 3)
30.0 /	98.23727 (41, 1)	122.73890C(30, 1)	71.46212C(231, 1)	44.62771 (203, 1)	37.19384 (203, 1)
20.0 /	118.43000C(205, 1)	107.21340C(354, 1)	90.81793C(30, 1)	67.52627 (50, 1)	43.10307 (50, 1)
10.0 /	149.80020C(70, 3)	99.06706 (41, 1)	78.98738C(354, 1)	60.44618C(354, 1)	35.16368C(29, 3)
360.0 /	98.89028C(163, 1)	122.40150 (36, 3)	70.74217 (36, 3)	45.86795 (36, 3)	40.49678C(30, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 203.56100 AND OCCURRED AT (200.0, 280.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	14.28195C(30, 1)	9.22093C(30, 1)	7.11990C(30, 1)
340.0 /	19.91538C(164, 1)	9.52047C(164, 1)	7.31718 (204, 1)
330.0 /	18.92018C(205, 1)	13.05676C(205, 1)	9.57339C(205, 1)
320.0 /	19.37821C(163, 1)	12.48587C(163, 1)	8.42136C(163, 1)
310.0 /	15.64494C(240, 1)	9.87635 (71, 1)	8.00122 (71, 1)
300.0 /	24.50610 (272, 3)	15.43233 (272, 3)	11.12625C(29, 1)
290.0 /	26.94967C(257, 1)	17.49773C(257, 1)	12.69177C(257, 1)
280.0 /	22.51317C(257, 1)	13.98529C(286, 1)	10.89146C(288, 1)
270.0 /	17.38971 (280, 3)	11.53386 (68, 1)	8.00087 (68, 1)
260.0 /	28.47245C(31, 1)	14.34951C(31, 1)	10.84431 (315, 1)
250.0 /	26.78659 (262, 1)	17.96617 (263, 1)	13.20860 (263, 1)
240.0 /	27.48103 (251, 1)	14.19166C(221, 1)	10.59616C(221, 1)
230.0 /	28.16622 (89, 1)	18.19332 (89, 1)	12.84232 (89, 1)
220.0 /	33.02611 (291, 1)	19.78409 (291, 1)	13.48864 (291, 1)
210.0 /	23.02234 (294, 1)	11.32102 (294, 1)	8.06567 (361, 3)
200.0 /	11.89765C(14, 1)	7.42466C(14, 1)	5.36822C(14, 1)
190.0 /	17.85221 (289, 1)	11.88634 (289, 1)	7.81611 (12, 1)
180.0 /	13.62336 (355, 1)	9.47483 (355, 1)	6.35156 (355, 1)
170.0 /	8.92634C(14, 1)	5.59929C(323, 3)	4.38261C(323, 3)
160.0 /	8.34347C(44, 3)	4.78225C(117, 1)	3.87173C(117, 1)
150.0 /	12.51719 (54, 3)	7.59422 (54, 3)	5.21199 (66, 1)
140.0 /	18.36679C(20, 3)	11.59493 (196, 3)	8.23908 (196, 3)
130.0 /	22.11926C(129, 1)	11.12532C(64, 1)	8.84533C(64, 1)
120.0 /	15.87944 (200, 3)	10.43356C(21, 3)	7.43510C(21, 3)
110.0 /	24.88462C(351, 3)	16.86355C(351, 3)	12.36164C(351, 3)
100.0 /	19.48881 (112, 1)	12.68134 (112, 1)	9.31180 (112, 1)
90.0 /	11.48726 (182, 3)	7.88612C(59, 1)	5.62364C(13, 1)
80.0 /	18.32781 (183, 1)	9.55956 (183, 1)	6.38639C(309, 3)
70.0 /	17.21700 (183, 1)	9.49576 (325, 1)	6.73526 (325, 1)
60.0 /	17.83240 (192, 1)	9.51480 (183, 1)	7.06893 (183, 1)
50.0 /	19.35733C(62, 1)	12.22279C(62, 1)	8.48924C(62, 1)
40.0 /	18.97617C(231, 1)	13.29972C(231, 1)	9.67848C(231, 1)
30.0 /	12.47053 (53, 3)	7.46325 (37, 3)	5.44695 (191, 3)
20.0 /	13.24773 (63, 1)	9.30006 (4, 3)	6.92484 (63, 1)
10.0 /	13.33028 (50, 1)	9.70204 (50, 1)	7.41836 (50, 1)
360.0 /	18.86451C(30, 1)	9.30193 (36, 3)	6.58373 (36, 3)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.54800 AND OCCURRED AT (300.0, 250.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	127.81090 (238, 2)	103.14370 (160, 1)	57.66698 (41, 1)	54.95208C(164, 1)	35.45788C(164, 1)
340.0 /	136.70210C(2, 1)	95.84206 (226, 1)	59.48957 (151, 1)	43.15305 (41, 1)	36.91235 (41, 1)
330.0 /	137.94410 (40, 1)	110.75110 (71, 1)	71.16254C(141, 1)	40.94899C(205, 1)	31.44395 (321, 1)
320.0 /	128.41780C(175, 1)	90.00038C(168, 1)	57.71881 (226, 1)	46.43322C(208, 1)	33.61523C(205, 1)
310.0 /	158.86960 (71, 1)	96.31922C(170, 1)	55.39527 (272, 3)	45.34264C(198, 1)	31.32896 (272, 3)
300.0 /	149.79590C(198, 1)	111.81780C(29, 1)	79.04806C(198, 1)	53.00579C(276, 1)	43.15510C(29, 1)
290.0 /	151.63190C(257, 1)	107.81700C(267, 1)	105.10040C(198, 1)	61.18921 (272, 3)	47.46157C(257, 1)
280.0 /	131.83400 (187, 1)	142.03690C(267, 1)	77.16051C(288, 1)	60.02041C(286, 1)	53.85291C(257, 1)
270.0 /	120.59270 (219, 1)	144.51360C(137, 1)	98.50173C(286, 1)	64.41082C(257, 1)	54.94535C(174, 1)
260.0 /	134.78500 (242, 3)	142.73680C(135, 1)	134.01110C(267, 1)	76.64286C(114, 1)	63.19358 (327, 1)
250.0 /	145.62590 (272, 1)	131.86510C(174, 1)	166.54800C(31, 1)	110.62880 (326, 1)	77.09729 (326, 1)
240.0 /	131.69920C(175, 1)	162.82300 (59, 3)	147.60970 (261, 1)	97.58611C(96, 1)	69.89137 (296, 1)
230.0 /	155.47710 (21, 1)	142.87730 (7, 1)	98.32262 (89, 1)	87.43966 (291, 1)	77.10049 (294, 1)
220.0 /	158.90170 (291, 1)	143.73180 (294, 1)	116.30600 (291, 1)	81.26829 (291, 1)	64.20468 (291, 1)
210.0 /	156.02140C(235, 3)	131.75550 (21, 1)	96.53440 (294, 1)	59.12295 (291, 1)	47.13716 (291, 1)
200.0 /	135.59120 (40, 1)	125.55320 (291, 1)	68.55608 (289, 1)	56.99257C(349, 3)	37.36856C(113, 1)
190.0 /	124.63230 (40, 1)	88.76939 (12, 1)	73.57330 (21, 1)	56.68359C(14, 1)	35.58968C(14, 1)
180.0 /	128.77960 (59, 3)	117.10120 (307, 3)	60.02436C(14, 1)	34.65760C(113, 1)	35.93478C(349, 3)
170.0 /	116.40120 (136, 1)	88.53837 (43, 3)	65.58011C(349, 3)	36.36453 (289, 1)	28.51968 (30, 3)
160.0 /	125.49580 (17, 3)	106.69820 (12, 1)	70.14780C(22, 3)	31.49444C(323, 3)	23.63720 (30, 3)
150.0 /	142.93170C(174, 1)	107.21340 (355, 1)	67.24995C(20, 3)	40.31035 (54, 3)	24.12065 (116, 3)
140.0 /	112.48250C(282, 3)	120.10000 (291, 1)	72.13396C(118, 3)	48.12098C(20, 3)	33.79617 (107, 3)
130.0 /	98.06985 (183, 1)	102.64060 (107, 3)	95.88757 (54, 3)	69.73682 (13, 3)	46.50637C(284, 3)
120.0 /	110.56540 (66, 3)	96.95341C(119, 3)	110.53240 (200, 3)	73.19992C(97, 3)	43.45419C(97, 3)
110.0 /	126.33060C(29, 1)	91.69997C(351, 3)	80.33968 (122, 3)	54.57868 (212, 3)	40.75532C(351, 3)
100.0 /	103.71630 (112, 1)	123.75830C(59, 1)	68.19663 (182, 3)	49.24334C(226, 3)	45.08466C(13, 1)
90.0 /	113.35050 (3, 3)	109.33240C(13, 1)	79.92461C(213, 1)	47.06621 (182, 3)	36.84407 (183, 1)
80.0 /	109.89210C(231, 1)	110.44180C(231, 1)	70.88291 (183, 1)	48.09425 (322, 3)	29.81797 (3, 3)
70.0 /	100.64980 (323, 1)	107.87450 (321, 3)	70.23492 (192, 1)	52.23584C(231, 1)	30.82106 (192, 1)
60.0 /	125.64940 (183, 1)	113.68180C(159, 1)	76.17434C(324, 3)	55.44764C(191, 1)	41.66398 (192, 1)
50.0 /	117.49370C(70, 3)	122.66910 (183, 1)	86.66422 (323, 1)	50.57578C(231, 1)	38.21599 (321, 3)
40.0 /	119.14740C(188, 1)	104.16570 (203, 1)	89.69164 (203, 1)	58.99387 (53, 3)	43.33691 (203, 1)
30.0 /	96.19279C(343, 3)	106.65990C(70, 3)	59.02017 (4, 3)	41.62671 (62, 3)	32.00119 (62, 3)
20.0 /	104.70030C(235, 3)	95.99393 (203, 1)	50.83274 (203, 1)	41.96869 (49, 3)	33.68818 (49, 3)
10.0 /	132.78030 (171, 2)	97.65582 (151, 1)	73.48537C(30, 1)	58.07929C(29, 3)	33.44207 (50, 1)
360.0 /	98.87524 (36, 3)	100.13900C(52, 1)	48.91753 (226, 1)	39.91709C(354, 1)	32.68582C(354, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 8-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.54800 AND OCCURRED AT (300.0, 250.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	13.46500C(354, 1)	8.36908C(354, 1)	6.14364 (37, 1)
340.0 /	13.04168 (226, 1)	8.97424 (204, 1)	6.49697C(164, 1)
330.0 /	14.60907 (321, 1)	9.48929 (36, 1)	7.23723 (36, 1)
320.0 /	15.15596 (321, 1)	9.50536 (321, 1)	6.58313 (321, 1)
310.0 /	13.25692 (344, 1)	8.84573C(240, 1)	6.16599C(207, 3)
300.0 /	22.42168C(29, 1)	15.09285C(29, 1)	11.02707 (272, 3)
290.0 /	23.63764C(267, 1)	15.39707C(267, 1)	11.77305C(267, 1)
280.0 /	20.00525C(174, 1)	13.42487C(288, 1)	10.27666C(286, 1)
270.0 /	17.27716 (40, 1)	11.36494C(173, 3)	7.51490C(173, 3)
260.0 /	23.04846 (59, 3)	13.61631 (315, 1)	9.41703C(175, 1)
250.0 /	26.49183 (263, 1)	16.72892 (262, 1)	11.50649 (262, 1)
240.0 /	25.88037 (296, 1)	14.11775 (296, 1)	9.66136C(116, 1)
230.0 /	24.47983 (261, 1)	15.09547 (21, 1)	10.17170 (21, 1)
220.0 /	30.83926 (294, 1)	18.08557 (294, 1)	12.56434 (294, 1)
210.0 /	19.86654 (291, 1)	10.96200 (361, 3)	6.61889 (294, 1)
200.0 /	11.23847 (363, 1)	6.49642 (363, 1)	4.51588 (363, 1)
190.0 /	16.44869 (12, 1)	11.25036 (12, 1)	7.70253 (289, 1)
180.0 /	11.76943 (289, 1)	7.93660C(14, 1)	5.30315 (307, 3)
170.0 /	7.65770 (21, 1)	4.74785 (279, 3)	3.61125 (279, 3)
160.0 /	7.83000C(33, 1)	4.66174 (116, 3)	3.68303C(119, 3)
150.0 /	12.11589 (116, 3)	6.66429 (66, 1)	5.08508 (54, 3)
140.0 /	16.23202 (196, 3)	10.74497C(227, 3)	7.32816C(227, 3)
130.0 /	16.07107 (55, 3)	10.87264C(141, 3)	8.09130C(141, 3)
120.0 /	15.75393C(21, 3)	8.60584 (201, 1)	6.34631 (201, 1)
110.0 /	18.95756C(59, 1)	12.49957C(59, 1)	9.10670C(59, 1)
100.0 /	10.75944 (101, 3)	6.61614 (101, 3)	4.27772C(213, 1)
90.0 /	9.64449 (202, 1)	6.64159C(13, 1)	5.16998C(59, 1)
80.0 /	12.12080 (322, 3)	8.03892 (322, 3)	5.88586 (183, 1)
70.0 /	14.07037 (325, 1)	8.62909 (184, 1)	6.05755 (184, 1)
60.0 /	17.76171C(191, 1)	9.24101 (192, 1)	5.82460 (212, 1)
50.0 /	16.29216C(70, 3)	10.42655C(70, 3)	7.52768C(70, 3)
40.0 /	18.96383C(159, 1)	11.14088C(159, 1)	7.79157C(159, 1)
30.0 /	11.65608 (37, 3)	7.05684 (191, 3)	5.41183 (37, 3)
20.0 /	13.02184 (4, 3)	9.07493 (63, 1)	6.82803 (4, 3)
10.0 /	12.09629 (49, 3)	8.01202 (49, 3)	5.42963 (49, 3)
360.0 /	13.97186 (36, 3)	8.89385C(30, 1)	5.32722C(30, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 97.50758 AND OCCURRED AT (100.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	74.03756C(238, 1)	42.86378C(164, 1)	32.67321C(164, 1)	27.94029C(164, 1)	18.39853C(164, 1)
340.0 /	82.59943C(235, 1)	50.07226 (344, 1)	36.20578 (36, 1)	21.58134 (36, 1)	16.15440C(164, 1)
330.0 /	83.42155C(40, 1)	50.06060 (36, 1)	32.62248C(163, 1)	19.86672 (345, 1)	17.15510 (344, 1)
320.0 /	71.50542 (242, 1)	46.80284C(353, 1)	31.66770C(168, 1)	19.59824C(205, 1)	17.27294 (344, 1)
310.0 /	89.70511 (263, 1)	46.25072 (223, 1)	31.13150 (272, 1)	21.90932C(168, 1)	17.20146C(193, 1)
300.0 /	90.31960 (272, 1)	51.10706C(215, 1)	31.54409 (223, 1)	27.47262 (272, 1)	22.36650 (272, 1)
290.0 /	80.29791C(267, 1)	55.64714 (272, 1)	42.67923 (272, 1)	30.57474 (272, 1)	22.56719 (272, 1)
280.0 /	66.32438 (223, 1)	76.45297 (272, 1)	43.69624 (273, 1)	29.05841C(271, 1)	22.83280 (272, 1)
270.0 /	74.16747C(286, 1)	85.80099C(286, 1)	54.43277C(286, 1)	35.54306C(286, 1)	28.64997C(286, 1)
260.0 /	80.06432 (242, 1)	85.20115 (263, 1)	67.08925 (242, 1)	42.30127 (260, 1)	31.66202C(286, 1)
250.0 /	95.60693 (263, 1)	76.74019C(283, 1)	67.05956 (136, 1)	56.10435 (32, 1)	36.19808 (32, 1)
240.0 /	78.69546C(288, 1)	77.19781C(251, 1)	85.06796C(21, 1)	50.00661 (263, 1)	39.83658 (262, 1)
230.0 /	96.80072C(21, 1)	82.71940C(264, 1)	54.07244 (294, 1)	43.07681C(293, 1)	31.31330C(247, 1)
220.0 /	83.20565C(286, 1)	83.16656 (294, 1)	53.62597 (294, 1)	40.82875 (294, 1)	29.70203 (294, 1)
210.0 /	95.22409 (280, 1)	74.79152C(21, 1)	46.33105 (294, 1)	30.84583 (294, 1)	24.11505 (294, 1)
200.0 /	79.61003 (312, 1)	64.32760 (294, 1)	37.57088 (289, 1)	25.68021 (294, 1)	18.82780 (294, 1)
190.0 /	97.50758C(21, 1)	49.36005C(44, 1)	34.59158C(21, 1)	25.79242C(113, 1)	17.10489C(113, 1)
180.0 /	75.74594C(15, 1)	55.53409 (307, 1)	33.40513C(284, 1)	20.76308 (289, 1)	16.05645 (289, 1)
170.0 /	66.66383 (55, 1)	44.15469 (43, 1)	32.13678C(113, 1)	21.74102 (289, 1)	13.52743C(117, 1)
160.0 /	72.08176 (201, 1)	67.31755 (289, 1)	27.95010 (66, 1)	14.56435C(113, 1)	11.73389C(279, 1)
150.0 /	86.65853C(2, 1)	53.05745C(64, 1)	38.42167C(113, 1)	20.56505C(54, 1)	14.05917C(54, 1)
140.0 /	73.32011C(282, 1)	62.59083C(54, 1)	42.29203C(13, 1)	28.77361C(13, 1)	20.03917C(54, 1)
130.0 /	70.66844 (289, 1)	86.16991C(300, 1)	56.53442C(54, 1)	45.54377C(20, 1)	38.82158C(20, 1)
120.0 /	76.14367C(52, 1)	52.30711 (201, 1)	73.98500C(20, 1)	41.36729C(64, 1)	24.84374C(64, 1)
110.0 /	69.53546C(228, 1)	59.63247C(13, 1)	48.55873 (201, 1)	28.62910 (112, 1)	20.19726C(230, 1)
100.0 /	57.91581 (112, 1)	60.94466C(228, 1)	44.73812 (183, 1)	19.68679 (212, 1)	21.17916C(213, 1)
90.0 /	76.90681C(213, 1)	61.70344C(213, 1)	34.69955C(213, 1)	22.26240 (183, 1)	16.38461 (183, 1)
80.0 /	55.71963C(214, 1)	57.09776 (183, 1)	35.56876C(231, 1)	27.05439 (183, 1)	22.84168 (183, 1)
70.0 /	64.90706C(38, 1)	50.58006C(190, 1)	35.07384 (183, 1)	25.09874 (183, 1)	18.92025 (183, 1)
60.0 /	87.22591C(52, 1)	59.31242C(231, 1)	39.53861C(211, 1)	29.72806C(191, 1)	18.31424C(191, 1)
50.0 /	62.88844 (232, 1)	80.73312 (322, 1)	42.49264C(62, 1)	27.78790C(62, 1)	20.59866C(62, 1)
40.0 /	64.12980C(231, 1)	68.00569C(52, 1)	39.06348C(62, 1)	27.06804C(203, 1)	19.40097C(53, 1)
30.0 /	57.49049C(190, 1)	58.68191C(70, 1)	27.11841C(231, 1)	18.92304C(49, 1)	14.50138C(203, 1)
20.0 /	62.06712C(190, 1)	53.12417 (37, 1)	30.52509C(30, 1)	25.52195 (50, 1)	16.73044 (50, 1)
10.0 /	85.39315 (280, 1)	60.05075 (41, 1)	34.10349 (37, 1)	21.98039 (36, 1)	15.72190 (36, 1)
360.0 /	55.94653 (36, 1)	70.20886 (36, 1)	41.02606 (36, 1)	22.77066 (36, 1)	15.68981 (36, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 97.50758 AND OCCURRED AT (100.0, 190.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	5.36508C(164, 1)	3.98328C(164, 1)	2.99336C(164, 1)
340.0 /	8.13632C(164, 1)	4.02607C(204, 1)	3.26175C(204, 1)
330.0 /	7.07668C(205, 1)	4.84451C(205, 1)	3.54160C(205, 1)
320.0 /	8.14330 (344, 1)	4.60006C(163, 1)	3.10260C(163, 1)
310.0 /	5.78223 (344, 1)	3.59939 (71, 1)	2.80727 (71, 1)
300.0 /	10.08994 (272, 1)	6.28054 (272, 1)	4.47105 (272, 1)
290.0 /	10.11327C(270, 1)	6.78176C(270, 1)	4.87500C(270, 1)
280.0 /	9.68903 (223, 1)	7.05153 (223, 1)	5.17437 (223, 1)
270.0 /	9.03477C(286, 1)	5.84160C(286, 1)	4.04756C(286, 1)
260.0 /	9.99656 (32, 1)	6.36220 (32, 1)	4.36760 (242, 1)
250.0 /	16.17659 (263, 1)	10.18427 (263, 1)	7.26780 (263, 1)
240.0 /	12.96665 (262, 1)	7.17034 (262, 1)	4.62015 (262, 1)
230.0 /	15.54927C(21, 1)	9.31029C(21, 1)	6.00753C(21, 1)
220.0 /	13.76735C(293, 1)	8.35966C(293, 1)	5.42051C(293, 1)
210.0 /	9.01598 (294, 1)	4.54848 (294, 1)	2.93948 (361, 1)
200.0 /	5.34853C(44, 1)	3.27943C(44, 1)	2.28640C(44, 1)
190.0 /	8.13308 (289, 1)	4.81073 (289, 1)	3.45839C(113, 1)
180.0 /	5.96905 (289, 1)	3.25191 (289, 1)	2.11728 (355, 1)
170.0 /	3.43327C(117, 1)	2.16093C(279, 1)	1.63450C(279, 1)
160.0 /	3.70205 (337, 1)	2.35697 (337, 1)	1.81888 (337, 1)
150.0 /	5.47656C(54, 1)	3.38321C(54, 1)	2.45260 (66, 1)
140.0 /	9.29467C(20, 1)	4.75074C(20, 1)	3.13870C(196, 1)
130.0 /	11.95079C(20, 1)	6.72156C(20, 1)	4.63675C(20, 1)
120.0 /	8.25644 (66, 1)	5.21192 (66, 1)	3.71347 (66, 1)
110.0 /	9.19566C(228, 1)	5.71783C(228, 1)	4.09973C(228, 1)
100.0 /	6.49795 (112, 1)	4.22731 (112, 1)	3.10398 (112, 1)
90.0 /	4.12594 (182, 1)	2.44619C(213, 1)	1.91512C(213, 1)
80.0 /	7.22179 (183, 1)	3.62127 (183, 1)	2.20165 (183, 1)
70.0 /	8.08452 (183, 1)	3.66692 (183, 1)	2.31727 (183, 1)
60.0 /	7.29271C(191, 1)	4.15187 (322, 1)	2.76779 (322, 1)
50.0 /	8.56935C(211, 1)	4.95830C(211, 1)	3.36606C(211, 1)
40.0 /	6.93913C(231, 1)	4.65275C(231, 1)	3.34091C(231, 1)
30.0 /	5.47007C(53, 1)	2.86140C(191, 1)	2.19961C(191, 1)
20.0 /	5.15285 (4, 1)	3.50709 (4, 1)	2.53265 (4, 1)
10.0 /	4.89342C(49, 1)	3.30427 (50, 1)	2.51487 (50, 1)
360.0 /	7.48457 (36, 1)	4.73283 (36, 1)	3.25412 (36, 1)

1 2ND HIGH

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 94.81500 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 100.0	200.0	300.0	400.0	500.0
350.0 /	66.96911C(286, 1)	41.33697C(204, 1)	24.27021 (334, 1)	19.24456 (36, 1)	14.13293 (36, 1)
340.0 /	81.94712 (312, 1)	41.38563C(215, 1)	29.70169 (344, 1)	19.20963C(164, 1)	16.10987 (36, 1)
330.0 /	65.06652C(168, 1)	45.48028 (71, 1)	30.32262 (344, 1)	18.02570 (344, 1)	12.87483C(335, 1)
320.0 /	68.92919C(335, 1)	46.13486C(164, 1)	24.93862C(193, 1)	19.27849 (71, 1)	12.77581 (345, 1)
310.0 /	72.69189 (71, 1)	42.45397 (71, 1)	27.10813C(207, 1)	20.93700 (167, 1)	14.72193C(168, 1)
300.0 /	82.77215C(275, 1)	47.97729C(168, 1)	29.24539C(198, 1)	24.66148C(353, 1)	17.43671C(353, 1)
290.0 /	74.59427C(52, 1)	52.48809C(168, 1)	39.27272C(353, 1)	25.64079C(166, 1)	20.65088C(270, 1)
280.0 /	65.92735C(286, 1)	64.74534 (242, 1)	38.80608 (223, 1)	28.80460 (223, 1)	21.21681 (223, 1)
270.0 /	63.51567 (312, 1)	73.20898 (312, 1)	43.13640C(270, 1)	32.24580 (242, 1)	25.62952C(271, 1)
260.0 /	68.46416C(3, 1)	78.45486 (273, 1)	58.28521 (260, 1)	40.01275 (312, 1)	30.95849 (312, 1)
250.0 /	92.19513 (272, 1)	72.27368 (223, 1)	64.05081 (314, 1)	50.17081 (326, 1)	35.31354 (260, 1)
240.0 /	68.49010C(33, 1)	69.51926 (314, 1)	78.78642 (89, 1)	48.90124 (262, 1)	34.65995 (263, 1)
230.0 /	71.16043C(283, 1)	79.54599 (326, 1)	46.89452 (82, 1)	42.47692 (292, 1)	29.87114 (291, 1)
220.0 /	76.63898 (223, 1)	72.06344 (361, 1)	52.00459 (291, 1)	36.93013 (291, 1)	27.35344C(293, 1)
210.0 /	94.81500 (312, 1)	59.93132 (303, 1)	45.61074 (291, 1)	25.86196 (291, 1)	19.93678C(293, 1)
200.0 /	72.46638C(76, 1)	56.19803C(33, 1)	34.76322 (294, 1)	23.16368C(21, 1)	16.24163C(113, 1)
190.0 /	74.68159C(271, 1)	46.88747C(21, 1)	29.28038 (294, 1)	22.57641 (289, 1)	16.28804 (289, 1)
180.0 /	61.47131C(59, 1)	55.42137C(284, 1)	31.88652 (289, 1)	19.65100C(44, 1)	15.88026C(113, 1)
170.0 /	56.69814 (314, 1)	41.79066C(33, 1)	27.95651 (289, 1)	19.90491C(44, 1)	12.58665 (289, 1)
160.0 /	69.33924C(190, 1)	56.84053C(21, 1)	27.85400C(14, 1)	14.17382C(54, 1)	11.54533C(116, 1)
150.0 /	70.78404 (312, 1)	51.73217C(20, 1)	32.86905C(117, 1)	18.98870 (107, 1)	12.90051 (107, 1)
140.0 /	71.41341C(274, 1)	58.11326 (66, 1)	40.41968C(20, 1)	28.74639C(20, 1)	19.80280C(20, 1)
130.0 /	58.68358C(228, 1)	77.65694 (361, 1)	53.28317C(13, 1)	43.57927C(13, 1)	28.07548C(64, 1)
120.0 /	74.32603 (66, 1)	45.71621C(119, 1)	71.00710C(13, 1)	37.13147C(20, 1)	22.73673C(200, 1)
110.0 /	64.78635 (303, 1)	52.03939C(64, 1)	37.71576 (212, 1)	27.14472C(230, 1)	20.07752 (112, 1)
100.0 /	53.13097C(190, 1)	52.68925 (183, 1)	37.82811C(228, 1)	19.26031 (19, 1)	19.68694 (201, 1)
90.0 /	61.23028 (201, 1)	59.94970C(13, 1)	34.65305C(191, 1)	20.58758 (201, 1)	13.82932C(213, 1)
80.0 /	55.30755C(70, 1)	54.44445C(228, 1)	33.91273 (322, 1)	22.09756 (322, 1)	13.39535 (322, 1)
70.0 /	54.24614C(70, 1)	49.27280 (322, 1)	33.62784C(191, 1)	23.37388C(231, 1)	15.29016 (322, 1)
60.0 /	70.31276C(191, 1)	57.16750C(159, 1)	37.59810 (183, 1)	23.25264C(323, 1)	17.86847C(211, 1)
50.0 /	61.67342 (334, 1)	67.18863C(211, 1)	41.24592C(211, 1)	26.69604C(211, 1)	19.35850C(211, 1)
40.0 /	56.75922C(160, 1)	64.13491C(191, 1)	35.69419C(203, 1)	26.89538C(62, 1)	18.44569C(211, 1)
30.0 /	55.04200C(227, 1)	56.34045 (50, 1)	26.47854C(49, 1)	17.60015C(203, 1)	13.32892C(53, 1)
20.0 /	59.15836C(62, 1)	48.63581C(164, 1)	26.43663C(49, 1)	19.98645C(49, 1)	15.64646C(49, 1)
10.0 /	74.99422 (50, 1)	53.74310 (4, 1)	28.69308C(354, 1)	21.56593 (50, 1)	13.64177 (50, 1)
360.0 /	51.87126 (321, 1)	47.22353 (321, 1)	25.13513 (321, 1)	14.61292C(49, 1)	12.63924C(30, 1)

*** Fugitive Emissions -- 1986 Met Data ***

* SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 94.81500 AND OCCURRED AT (100.0, 210.0) *

DIRECTION / (DEGREES) /	RANGE (METERS) 1000.0	1500.0	2000.0
350.0 /	4.89599 (36, 1)	3.10489 (37, 1)	2.21457 (37, 1)
340.0 /	5.67955C(204, 1)	3.89079C(164, 1)	2.39349C(164, 1)
330.0 /	5.88651 (344, 1)	3.28650 (36, 1)	2.46573 (36, 1)
320.0 /	7.13937C(163, 1)	4.20258 (344, 1)	2.45198 (344, 1)
310.0 /	5.62006C(168, 1)	3.51457C(206, 1)	2.56625C(206, 1)
300.0 /	6.91609C(275, 1)	4.59492C(29, 1)	3.37304C(29, 1)
290.0 /	9.28016C(166, 1)	5.31229C(166, 1)	3.82082C(166, 1)
280.0 /	9.02775C(271, 1)	5.23181C(271, 1)	3.63053C(288, 1)
270.0 /	8.83540 (312, 1)	5.30774 (312, 1)	3.57938 (312, 1)
260.0 /	9.89729 (242, 1)	6.14119 (242, 1)	4.35781 (32, 1)
250.0 /	13.30154 (262, 1)	7.88017 (262, 1)	5.36982 (262, 1)
240.0 /	11.32280C(264, 1)	6.44415C(264, 1)	4.13413C(264, 1)
230.0 /	10.71845 (82, 1)	6.30566 (89, 1)	4.41429 (89, 1)
220.0 /	12.85981 (291, 1)	7.43256 (291, 1)	4.94466 (291, 1)
210.0 /	7.44471 (291, 1)	4.26648 (361, 1)	2.72829 (294, 1)
200.0 /	4.44319 (294, 1)	2.29279 (338, 1)	1.54847C(14, 1)
190.0 /	6.54471C(113, 1)	4.39635C(113, 1)	3.05136 (289, 1)
180.0 /	4.54644 (355, 1)	3.15875 (355, 1)	2.04017 (289, 1)
170.0 /	3.28471C(279, 1)	1.67979C(128, 1)	1.31478C(128, 1)
160.0 /	3.47940C(279, 1)	1.91793C(59, 1)	1.61518C(59, 1)
150.0 /	4.74241 (66, 1)	3.21467 (66, 1)	2.29168C(54, 1)
140.0 /	6.18363C(196, 1)	4.41712C(196, 1)	2.98168C(20, 1)
130.0 /	9.41996C(13, 1)	5.90989C(64, 1)	4.22123C(13, 1)
120.0 /	7.15852C(200, 1)	3.28413C(200, 1)	2.14192 (201, 1)
110.0 /	7.12421C(351, 1)	4.82117C(351, 1)	3.53293C(351, 1)
100.0 /	4.06925C(101, 1)	2.46337C(101, 1)	1.47616C(101, 1)
90.0 /	4.12031C(213, 1)	2.38153 (201, 1)	1.87455C(13, 1)
80.0 /	4.04489 (322, 1)	2.67982 (322, 1)	1.92942C(309, 1)
70.0 /	5.72171C(191, 1)	3.18321C(65, 1)	2.24987C(65, 1)
60.0 /	7.10737 (322, 1)	3.82475 (183, 1)	2.75916 (183, 1)
50.0 /	7.89344C(62, 1)	4.38227C(62, 1)	2.89917C(62, 1)
40.0 /	6.35573C(203, 1)	3.53106C(203, 1)	2.42163C(203, 1)
30.0 /	4.42430C(203, 1)	2.62885 (37, 1)	1.88395 (37, 1)
20.0 /	5.06890C(49, 1)	3.18425 (63, 1)	2.39936 (63, 1)
10.0 /	4.72678 (50, 1)	3.07854C(49, 1)	2.06544C(49, 1)
360.0 /	5.92909C(30, 1)	2.78317C(30, 1)	1.75568C(38, 1)

RUN ENDED ON 09-08-90 AT 17:57:08

FLORIDA FIRST PROCESSING, L.P.

APPENDIX L-50

PTPLU-2 RUN

FOR

STEAM BOILER STACK

1 PTPLU-2.0 (DATED 86196)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 3. NON-GUIDELINE MODELS.
IN UNAMAP (VERSION 6) JUL 86
SOURCE: FILE 21 ON UNAMAP MAGNETIC TAPE FROM NTIS.

IBM-PC VERSION 1.20

SERIAL NUMBER 5959 SOLD TO ICF TECHNOLOGY, INC.
RUN BEGAN ON 08-30-90 AT 12:21:19

>>>INPUT PARAMETERS<<<

*** TITLE*** steam boiler

OPTIONS
IF = 1, USE OPTION
IF = 0, IGNORE OPTION
IOPT(1) = 0 (GRAD PLUME RISE)
IOPT(2) = 1 (STACK DOWNWASH)
IOPT(3) = 1 (BUOY. INDUCED DISP.)
IDFLT = 1 (1 = USE DEFAULT, 0 = NOT USE DEFAULT)
MUOR = 2 (1 = URBAN, 2 = RURAL)
0***RECEPTOR HEIGHT*** = .00 (M)

METEOROLOGY
AMBIENT AIR TEMPERATURE = 293.00 (K)
MIXING HEIGHT = 5000.00 (M)
ANEMOMETER HEIGHT = 10.00 (M)
WIND PROFILE EXPONENTS = A: .07, B: .07, C: .10
D: .15, E: .35, F: .55

SOURCE
EMISSION RATE = 1.00 (G/SEC)
STACK HEIGHT = 30.48 (M)
EXIT TEMP. = 352.59 (K)
EXIT VELOCITY = 8.42 (M/SEC)
STACK DIAM. = .40 (M)

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = 1.06 (M**3/SEC) BUOYANCY FLUX PARAMETER = .56 (M**4/SEC**3)

steam boiler

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
1	.50	89.20	.281	58.2	.54	87.77	.273	56.1
1	.80	78.21	.236	47.8	.86	75.97	.230	46.5
1	1.00	71.52	.221	44.3	1.08	69.01	.217	43.3
1	1.50	57.99	.201	39.7	1.62	55.36	.197	39.0
1	2.00	48.45	.190	37.4	2.16	45.96	.187	36.9
1	2.50	41.50	.183	36.0	2.70	39.20	.181	35.6
1	3.00	36.24	.179	35.1	3.24	34.13	.178	34.7

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
2	.50	83.26	.419	58.2	.54	82.24	.406	56.1
2	.80	75.27	.339	47.8	.86	73.35	.330	46.5
2	1.00	69.45	.315	44.3	1.08	67.19	.308	43.3
2	1.50	57.06	.283	39.7	1.62	54.57	.278	39.0
2	2.00	47.96	.267	37.4	2.16	45.56	.263	36.9
2	2.50	41.22	.257	36.0	2.70	38.98	.254	35.6
2	3.00	36.10	.251	35.1	3.24	34.03	.248	34.7
2	4.00	28.86	.243	33.9	4.32	27.09	.241	33.7
2	5.00	24.01	.238	33.2	5.41	22.48	.236	33.0

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
3	2.00	49.68	.398	37.4	2.24	46.22	.390	36.7
3	2.50	42.84	.383	36.0	2.79	39.59	.376	35.4
3	3.00	37.59	.372	35.1	3.35	34.57	.367	34.6
3	4.00	30.13	.359	33.9	4.47	27.54	.355	33.6
3	5.00	25.12	.351	33.2	5.59	22.87	.348	33.0
3	7.00	19.10	.339	32.2	7.83	17.42	.336	31.9

3	10.00	14.13	.329	31.3	11.18	12.82	.327	31.1
3	12.00	12.04	.325	31.0	13.41	10.90	.323	30.8
3	15.00	9.85	.321	30.7	16.77	8.89	.320	30.5

1
0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
4	.50	61.78	1.204	58.2	.59	62.49	1.079	53.9
4	.80	60.78	1.000	47.8	.95	57.96	.941	45.1
4	1.00	56.89	.921	44.3	1.18	53.36	.870	42.2
4	1.50	47.74	.810	39.7	1.77	43.60	.776	38.3
4	2.00	40.60	.754	37.4	2.36	36.51	.729	36.3
4	2.50	35.16	.721	36.0	2.95	31.29	.701	35.2
4	3.00	30.95	.699	35.1	3.55	27.34	.682	34.4
4	4.00	24.91	.671	33.9	4.73	21.79	.659	33.4
4	5.00	20.82	.655	33.2	5.91	18.17	.643	32.8
4	7.00	15.89	.630	32.2	8.27	13.86	.619	31.8
4	10.00	11.80	.609	31.3	11.82	10.20	.602	31.0
4	12.00	10.07	.601	31.0	14.18	8.67	.595	30.7
4	15.00	8.25	.593	30.7	17.73	7.08	.588	30.4
4	20.00	6.33	.585	30.3	23.64	5.42	.581	30.2

0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
5	2.00	16.78	1.789	49.9	2.95	12.75	1.665	47.5
5	2.50	14.36	1.715	48.5	3.69	10.85	1.602	46.3
5	3.00	12.61	1.660	47.4	4.43	9.49	1.555	45.4
5	4.00	10.24	1.581	45.9	5.91	7.68	1.483	44.0
5	5.00	8.68	1.525	44.8	7.39	6.57	1.422	42.8

0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	2.00	14.83	3.000	46.6	3.69	9.56	2.870	43.6
6	2.50	12.69	3.000	45.4	4.61	8.09	2.765	42.7
6	3.00	11.13	2.976	44.6	5.54	7.04	2.686	42.0
6	4.00	9.01	2.833	43.3	7.38	5.75	2.538	40.6
6	5.00	7.61	2.729	42.4	9.23	4.89	2.437	39.7

0 (1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

RUN ENDED ON 08-30-90 AT 12:21:34

1 PTPLU-2.0 (DATED 86196)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 3. NON-GUIDELINE MODELS.
IN UNAMAP (VERSION 6) JUL 86
SOURCE: FILE 21 ON UNAMAP MAGNETIC TAPE FROM NTIS.

IBM-PC VERSION 1.20

SERIAL NUMBER 5959 SOLD TO ICF TECHNOLOGY, INC.
RUN BEGAN ON 08-20-90 AT 12:26:46

>>>INPUT PARAMETERS<<<

*** TITLE*** inorgo waste treatment -- 10% (1000 ACFM)

OPTIONS
IF = 1, USE OPTION
IF = 0, IGNORE OPTION
IOPT(1) = 0 (GRAD PLUME RISE)
IOPT(2) = 1 (STACK DOWNWASH)
IOPT(3) = 1 (BUOY. INDUCED DISP.)
IDFLT = 1 (1 = USE DEFAULT, 0 = NOT USE DEFAULT)
MUOR = 2 (1 = URBAN, 2 = RURAL)
0***RECEPTOR HEIGHT*** = .00 (M)

METEOROLOGY
AMBIENT AIR TEMPERATURE = 293.00 (K)
MIXING HEIGHT = 5000.00 (M)
ANEMOMETER HEIGHT = 10.00 (M)
WIND PROFILE EXPONENTS = A: .07, B: .07, C: .10
D: .15, E: .35, F: .55

SOURCE
EMISSION RATE = 1.00 (G/SEC)
STACK HEIGHT = 30.48 (M)
EXIT TEMP. = 293.15 (K)
EXIT VELOCITY = 1.62 (M/SEC)
STACK DIAM. = .61 (M)

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = .47 (M**3/SEC) BUOYANCY FLUX PARAMETER = .00 (M**4/SEC**3)

inorgo waste treatment -- 10%

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
1	.50	203.43	.185	36.4	.54	192.39	.183	36.0
1	.80	142.50	.175	34.2	.86	133.77	.174	33.9
1	1.00	118.62	.172	33.4	1.08	111.06	.171	33.2
1	1.50	85.95	.165	31.9	1.62	80.63	.163	31.7
1	2.00	67.60	.161	31.1	2.16	63.21	.160	30.9
1	2.50	55.67	.158	30.6	2.70	51.95	.158	30.5
1	3.00	47.32	.157	30.3	3.24	44.09	.156	30.2

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
2	.50	201.88	.260	36.4	.54	191.16	.257	36.0
2	.80	142.31	.244	34.2	.86	133.70	.242	33.9
2	1.00	118.72	.239	33.4	1.08	111.23	.237	33.2
2	1.50	86.42	.228	31.9	1.62	81.14	.226	31.7
2	2.00	68.15	.222	31.1	2.16	63.76	.221	30.9
2	2.50	56.22	.219	30.6	2.70	52.49	.218	30.5
2	3.00	47.83	.216	30.3	3.24	44.59	.215	30.2
2	4.00	36.83	.213	29.9	4.32	34.27	.213	29.8
2	5.00	29.94	.212	29.6	5.41	27.82	.211	29.6

0 ****WINDS CONSTANT WITH HEIGHT**** / ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
3	2.00	71.66	.327	31.1	2.24	65.19	.324	30.9
3	2.50	59.19	.321	30.6	2.79	53.68	.319	30.4
3	3.00	50.41	.317	30.3	3.35	45.61	.315	30.1
3	4.00	38.86	.313	29.9	4.47	35.06	.311	29.8
3	5.00	31.61	.310	29.6	5.59	28.47	.309	29.5
3	7.00	23.01	.307	29.4	7.83	20.69	.306	29.3

3	10.00	16.34	.304	29.1	11.18	14.67	.304	29.1
3	12.00	13.70	.303	29.1	13.41	12.29	.303	29.0
3	15.00	11.02	.302	29.0	16.77	9.88	.302	28.9

1

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
4	.50	171.83	.730	36.4	.59	153.37	.709	35.5
4	.80	122.66	.677	34.2	.95	107.54	.664	33.6
4	1.00	102.79	.660	33.4	1.18	90.45	.645	32.8
4	1.50	75.54	.624	31.9	1.77	66.12	.611	31.4
4	2.00	59.88	.604	31.1	2.36	52.01	.595	30.7
4	2.50	49.56	.592	30.6	2.95	42.83	.585	30.3
4	3.00	42.26	.584	30.3	3.55	36.40	.578	30.0
4	4.00	32.63	.574	29.9	4.73	27.99	.570	29.7
4	5.00	26.57	.569	29.6	5.91	22.73	.565	29.5
4	7.00	19.37	.562	29.4	8.27	16.52	.559	29.2
4	10.00	13.77	.557	29.1	11.82	11.72	.555	29.1
4	12.00	11.54	.555	29.1	14.18	9.81	.553	29.0
4	15.00	9.29	.553	29.0	17.73	7.89	.552	28.9
4	20.00	7.01	.551	28.9	23.64	5.95	.550	28.9

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
5	2.00	51.43	.958	31.1	2.95	36.87	.926	30.3
5	2.50	42.62	.939	30.6	3.69	30.22	.913	30.0
5	3.00	36.37	.925	30.3	4.43	25.60	.904	29.8
5	4.00	28.11	.909	29.9	5.91	19.61	.893	29.5
5	5.00	22.91	.899	29.6	7.39	15.88	.886	29.3

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	2.00	41.68	1.757	31.1	3.69	24.71	1.657	30.0
6	2.50	34.67	1.713	30.6	4.61	20.21	1.634	29.7
6	3.00	29.66	1.685	30.3	5.54	17.09	1.619	29.5
6	4.00	23.00	1.649	29.9	7.38	13.05	1.599	29.3
6	5.00	18.78	1.627	29.6	9.23	10.56	1.588	29.2

0 (1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

RUN ENDED ON 08-20-90 AT 12:27:01

1

PTPLU-2.0 (DATED 86196)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 3. NON-GUIDELINE MODELS.
IN UNAMAP (VERSION 6) JUL 86
SOURCE: FILE 21 ON UNAMAP MAGNETIC TAPE FROM NTIS.

IBM-PC VERSION 1.20

SERIAL NUMBER 5959 SOLD TO ICF TECHNOLOGY, INC.
RUN BEGAN ON 08-20-90 AT 12:26:29

>>>INPUT PARAMETERS<<<

*** TITLE*** inorgo waste treatment -- 100% (6,000 ACFM)

OPTIONS
IF = 1, USE OPTION
IF = 0, IGNORE OPTION
IOPT(1) = 0 (GRAD PLUME RISE)
IOPT(2) = 1 (STACK DOWNWASH)
IOPT(3) = 1 (BUOY. INDUCED DISP.)
IDFLT = 1 (1 = USE DEFAULT, 0 = NOT USE DEFAULT)
MUOR = 2 (1 = URBAN, 2 = RURAL)
0***RECEPTOR HEIGHT*** = .00 (M)

METEOROLOGY
AMBIENT AIR TEMPERATURE = 293.00 (K)
MIXING HEIGHT = 5000.00 (M)
ANEMOMETER HEIGHT = 10.00 (M)
WIND PROFILE EXPONENTS = A: .07, B: .07, C: .10
D: .15, E: .35, F: .55

SOURCE
EMISSION RATE = 1.00 (G/SEC)
STACK HEIGHT = 30.48 (M)
EXIT TEMP. = 293.15 (K)
EXIT VELOCITY = 9.70 (M/SEC)
STACK DIAM. = .61 (M)

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = 2.83 (M**3/SEC) BUOYANCY FLUX PARAMETER = .00 (M**4/SEC**3)

inorgo waste treatment -- 100%

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
1	.50	72.22	.313	66.0	.54	71.45	.305	63.3
1	.80	65.96	.261	52.7	.86	64.39	.249	51.0
1	1.00	61.52	.237	48.2	1.08	59.81	.232	46.9
1	1.50	51.77	.212	42.3	1.62	49.73	.209	41.4
1	2.00	44.18	.198	39.4	2.16	42.15	.195	38.7
1	2.50	38.42	.190	37.6	2.70	36.47	.188	37.0
1	3.00	33.93	.185	36.4	3.24	32.08	.183	36.0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
2	.50	66.27	.468	66.0	.54	66.04	.452	63.3
2	.80	62.56	.373	52.7	.86	61.50	.361	51.0
2	1.00	59.14	.342	48.2	1.08	57.69	.333	46.9
2	1.50	50.55	.302	42.3	1.62	48.68	.295	41.4
2	2.00	43.52	.281	39.4	2.16	41.58	.276	38.7
2	2.50	38.01	.268	37.6	2.70	36.13	.265	37.0
2	3.00	33.67	.260	36.4	3.24	31.88	.257	36.0
2	4.00	27.33	.250	34.9	4.32	25.75	.247	34.6
2	5.00	22.97	.243	34.0	5.41	21.57	.241	33.8

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
3	2.00	44.90	.420	39.4	2.24	42.13	.410	38.4
3	2.50	39.36	.400	37.6	2.79	36.65	.392	36.8
3	3.00	34.96	.387	36.4	3.35	32.36	.380	35.8
3	4.00	28.47	.370	34.9	4.47	26.16	.365	34.4
3	5.00	23.98	.360	34.0	5.59	21.93	.356	33.7
3	7.00	18.35	.347	32.9	7.83	16.87	.342	32.4

3	10.00	13.89	.332	31.6	11.18	12.68	.329	31.3
3	12.00	11.95	.327	31.1	13.41	10.87	.324	30.9
3	15.00	9.87	.321	30.6	16.77	8.95	.319	30.4

1
0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
4	.50	45.94	1.442	66.0	.59	47.60	1.275	60.5
4	.80	48.72	1.044	52.7	.95	48.14	1.000	49.3
4	1.00	47.65	1.000	48.2	1.18	45.55	.950	45.5
4	1.50	41.78	.873	42.3	1.77	38.76	.829	40.5
4	2.00	36.47	.801	39.4	2.36	33.24	.768	38.0
4	2.50	32.15	.759	37.6	2.95	28.94	.732	36.5
4	3.00	28.66	.730	36.4	3.55	25.58	.708	35.5
4	4.00	23.46	.695	34.9	4.73	20.69	.678	34.2
4	5.00	19.82	.673	34.0	5.91	17.35	.660	33.5
4	7.00	15.23	.646	32.9	8.27	13.44	.630	32.2
4	10.00	11.59	.616	31.6	11.82	10.11	.605	31.2
4	12.00	9.98	.604	31.1	14.18	8.67	.595	30.7
4	15.00	8.26	.592	30.6	17.73	7.14	.585	30.3
4	20.00	6.42	.580	30.1	23.64	5.52	.575	29.9

0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
5	2.00	30.63	1.229	38.8	2.95	24.00	1.121	36.5
5	2.50	26.42	1.172	37.6	3.69	20.82	1.065	35.3
5	3.00	23.78	1.116	36.4	4.43	18.34	1.028	34.5
5	4.00	19.71	1.048	34.9	5.91	14.77	1.000	33.5
5	5.00	16.78	1.007	34.0	7.39	12.52	1.000	32.7

0

	****WINDS CONSTANT WITH HEIGHT****				****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	2.00	25.17	2.267	38.0	3.69	16.59	2.000	35.3
6	2.50	20.91	2.210	37.5	4.61	14.24	2.000	34.3
6	3.00	18.83	2.099	36.4	5.54	12.42	2.000	33.7
6	4.00	15.74	2.000	34.9	7.38	10.04	1.896	32.7
6	5.00	13.43	2.000	34.0	9.23	8.53	1.824	31.9

0 (1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

RUN ENDED ON 08-20-90 AT 12:26:45

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1                    PTPLU-2.0  (DATED 86196)
                     AN AIR QUALITY DISPERSION MODEL IN
                     SECTION 3. NON-GUIDELINE MODELS.
                     IN UNAMAP (VERSION 6) JUL 86
                     SOURCE: FILE 21 ON UNAMAP MAGNETIC TAPE FROM NTIS.

                     IBM-PC VERSION 1.20
                     (C) COPYRIGHT 1986, TRINITY CONSULTANTS, INC.
                     SERIAL NUMBER 5959 SOLD TO ICF TECHNOLOGY, INC.
                     RUN BEGAN ON 09-27-90 AT 14:15:48

                                   >>>INPUT PARAMETERS<<<
 *** TITLE***   Chiller -- with stack

 ***OPTIONS***                     ***METEOROLOGY***                                 ***SOURCE***
 IF = 1, USE OPTION                AMBIENT AIR TEMPERATURE =   293.15 (K)            EMISSION RATE =     .01 (G/SEC)
 IF = 0, IGNORE OPTION             MIXING HEIGHT           =  5000.00 (M)            STACK HEIGHT  =   22.86 (M)
 IOPT(1) = 0 (GRAD PLUME RISE)     ANEMOMETER HEIGHT       =    10.00 (M)            EXIT TEMP.    =  293.15 (K)
 IOPT(2) = 1 (STACK DOWNWASH)      WIND PROFILE EXPONENTS  = A: .07, B: .07, C: .10  EXIT VELOCITY =    6.10 (M/SEC)
 IOPT(3) = 1 (BUOY. INDUCED DISP.)                           D: .15, E: .35, F: .55  STACK DIAM.   =     .14 (M)
 IDFLT   = 1 (1 = USE DEFAULT, 0 = NOT USE DEFAULT)
 MUOR    = 2 (1 = URBAN, 2 = RURAL)
0***RECEPTOR HEIGHT*** =      .00 (M)

                                  >>>CALCULATED PARAMETERS<<<
 VOLUMETRIC FLOW =      .09 (M**3/SEC)          BUOYANCY FLUX PARAMETER =      .00 (M**4/SEC**3)


  Chiller -- with stack
0                ****WINDS CONSTANT WITH HEIGHT****          ****STACK TOP WINDS (EXTRAPOLATED FROM  10.0 METERS)****
 STABILITY   WIND SPEED   MAX CONC   DIST OF MAX    PLUME HT     WIND SPEED   MAX CONC   DIST OF MAX    PLUME HT
              (M/SEC)    (UG/CU M)      (KM)          (M)          (M/SEC)   (UG/CU M)      (KM)          (M)
    1            .50        3.95        .144         28.0            .53        3.80        .143         27.7
    1            .80        2.81        .135         26.1            .85        2.69        .134         25.9
    1           1.00        2.35        .132         25.4           1.06        2.25        .131         25.3
    1           1.50        1.67        .128         24.6           1.59        1.59        .127         24.5
    1           2.00        1.29        .126         24.1           2.12        1.23        .125         24.1
    1           2.50        1.06        .124         23.9           2.65        1.00        .124         23.8
    1           3.00         .89        .123         23.7           3.18         .85        .123         23.7
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0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
2	.50	4.02	.196	28.0	.53	3.87	.194	27.7
2	.80	2.89	.182	26.1	.85	2.76	.181	25.9
2	1.00	2.43	.177	25.4	1.06	2.32	.176	25.3
2	1.50	1.73	.171	24.6	1.59	1.65	.170	24.5
2	2.00	1.34	.168	24.1	2.12	1.28	.167	24.1
2	2.50	1.10	.166	23.9	2.65	1.04	.165	23.8
2	3.00	.93	.165	23.7	3.18	.88	.164	23.7
2	4.00	.71	.163	23.5	4.24	.67	.163	23.4
2	5.00	.58	.162	23.3	5.30	.55	.161	23.2

0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
3	2.00	1.43	.247	24.1	2.17	1.33	.246	24.0
3	2.50	1.17	.245	23.9	2.72	1.08	.244	23.8
3	3.00	.99	.243	23.7	3.26	.92	.242	23.6
3	4.00	.75	.240	23.5	4.34	.70	.239	23.4
3	5.00	.61	.238	23.3	5.43	.57	.237	23.2
3	7.00	.45	.235	23.0	7.60	.41	.235	23.0
3	10.00	.32	.233	22.9	10.86	.29	.233	22.8
3	12.00	.27	.232	22.8	13.03	.25	.232	22.8
3	15.00	.22	.232	22.7	16.29	.20	.231	22.7

1

0

STABILITY	****WINDS CONSTANT WITH HEIGHT**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)**** WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
4	.50	3.61	.527	28.0	.57	3.34	.514	27.4
4	.80	2.62	.484	26.1	.91	2.39	.476	25.7
4	1.00	2.21	.470	25.4	1.13	2.00	.463	25.1
4	1.50	1.59	.451	24.6	1.70	1.43	.446	24.4
4	2.00	1.23	.441	24.1	2.26	1.11	.438	24.0
4	2.50	1.01	.435	23.9	2.83	.90	.433	23.8
4	3.00	.85	.432	23.7	3.40	.76	.429	23.6
4	4.00	.65	.427	23.5	4.53	.58	.424	23.4
4	5.00	.53	.422	23.3	5.66	.47	.420	23.2
4	7.00	.39	.417	23.0	7.92	.35	.415	23.0
4	10.00	.28	.413	22.9	11.32	.25	.412	22.8

4	12.00	.23	.411	22.8	13.58	.21	.410	22.8
4	15.00	.19	.409	22.7	16.98	.17	.409	22.7
4	20.00	.14	.408	22.7	22.64	.13	.407	22.6

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
5	2.00	1.08	.684	24.1	2.67	.83	.673	23.8
5	2.50	.89	.675	23.9	3.34	.68	.665	23.6
5	3.00	.75	.669	23.7	4.01	.57	.661	23.5
5	4.00	.57	.661	23.5	5.34	.44	.651	23.2
5	5.00	.47	.653	23.3	6.68	.36	.645	23.1

0 ****WINDS CONSTANT WITH HEIGHT**** ****STACK TOP WINDS (EXTRAPOLATED FROM 10.0 METERS)****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	2.00	.93	1.174	24.1	3.15	.62	1.138	23.7
6	2.50	.76	1.155	23.9	3.94	.50	1.126	23.5
6	3.00	.65	1.142	23.7	4.73	.43	1.114	23.3
6	4.00	.50	1.126	23.5	6.30	.33	1.097	23.1
6	5.00	.41	1.110	23.3	7.88	.27	1.086	23.0

0 (1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

RUN ENDED ON 09-27-90 AT 14:16:07

SECTION K

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, I agree to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department of Environmental Regulation. It is understood that the permit is only transferable in accordance with Section 17-30, FAC, and, if granted a permit, the Department of Environmental Regulation will be notified prior to the sale or legal transfer of the permitted facility.

Juan J. Gutierrez

President, Florida First Processing, Inc.

Date: 5-30-89 Telephone No.: (703) 893-3518

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

SUMMARY SHEET

ITEM	COST
1. CONTAINER BUILDINGS	$2,001,633
2. TANK FARMS/HANDLING AREAS	$892,825
3. INORGANIC TREATMENT SYSTEM	$57,267
4. INCINERATION SYSTEM	$84,905
5. LABORATORY	$29,712
6. LOADOUT AND UNLOADING AREAS	$3,078,810
7. GENERAL FACILITY ITEMS	$207,417
8. ADMINISTRATION	$93,600
TOTAL	$6,446,168
CONTINGENCY FEE (10%)	$644,617
ADJUSTED TOTAL	$7,090,785

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
1. CONTAINER BUILDINGS										
A. ORGANIC CONTAINER STAGING										
(1) Inventory Management										
(a) Container Loading \d	drum	3,456	$1.30							$4,493
(b) Transport of Container'd Waste	drum	3,456					80	500	$3.50	$77,000
(c) Off-Site Incineration of Wastes \e	drum	3,456	$500							$1,728,000
(2) Decontamination										
(a) Containment Area Rinsing	sq. ft.	38,140		50	763	$37.50				$28,605
(b) Transport of Rinse Waters \f	gal	152,560					6,000	250	$3.50	$22,750
(c) Off-Site Trtmt of Rinse Waters \e	gal	152,560	$0.50							$76,280
						ORGANIC CONTAINER STAGING - SUBTOTAL				$1,937,128
B. ORGANIC CONTAINER PROCESSING										
(1) Inventory Management										
(a) Transport of Bulk Liquids	gal	2,000					6,000	500	$3.50	$1,750
(b) Off-Site Incineration of Wastes \e	gal	2,000	$3							$6,000
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	525		50	11	$37.50				$394
(b) Containment Area Rinsing	sq. ft.	350		50	7	$37.50				$263
(c) Transport of Rinse Waters \f	gal	3,500					6,000	250	$3.50	$875
(d) Off-Site Trtmt of Rinse Waters \e	gal	3,500	$0.50							$1,750
						ORGANIC CONTAINER PROCESSING - SUBTOTAL				$11,031

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
C. INORGANIC CONTAINER STAGING										
(1) Inventory Management										
(a) Container Emptying	drum	584	$40							$23,360
(b) On-Site Waste Treatment \h	gal	32,120	$0.15							$4,818
(c) Transport of Residuals \i	ton	27					35	500	$3.50	$1,750
(d) Landfilling of Residuals \e	ton	27	$125							$3,346
(2) Decontamination										
(a) Container Rinsing	no.	584		12	49	$37.50				$1,825
(b) Container Loading \d	no.	584	$1.30							$759
(c) Transport of Containers	no.	584					80	250	$3.50	$7,000
(d) Sale of Recycled Cont.	no.	584								$0
(e) Containment Area Rinsing	sq. ft.	3,420		50	68	$37.50				$2,565
(f) On-Site Trtmt of Rinse Waters \f,h	gal	19,520	$0.15							$2,928
						INORGANIC CONTAINER STAGING - SUBTOTAL				$48,351
D. INORGANIC CONTAINER PROCESSING										
(1) Inventory Management										
(a) On-Site Waste Treatment \h	gal	4,000	$0.15							$600
(b) Transport of Residuals \i	ton	3					35	500	$3.50	$1,750
(c) Landfilling of Residuals \e	ton	3	$125							$417
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	1,050		50	21	$37.50				$788
(b) Containment Area Rinsing	sq. ft.	695		50	14	$37.50				$521
(c) On-Site Trtmt of Rinse Waters \f,h	gal	6,980	$0.15							$1,047
						INORGANIC CONTAINER PROCESSING - SUBTOTAL				$5,122
						CONTAINER BUILDINGS - TOTAL				$2,001,633

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
2. TANK FARMS/HANDLING AREAS										
A. ORGANIC TANK FARM										
(1) Inventory Management										
(a) Transport of Bulk Liquids	gal	208,000					6,000	500	$3.50	$61,250
(b) Off-Site Incineration of Wastes \e	gal	208,000	$3							$624,000
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	14,125		50	283	$37.50				$10,594
(b) Containment Area Rinsing	sq. ft.	9,030		50	181	$37.50				$6,773
(c) Transport of Rinse Waters \f	gal	92,620					6,000	250	$3.50	$14,000
(d) Off-Site Trtmt of Rinse Waters \e	gal	92,620	$0.50							$46,310
ORGANIC TANK FARM - SUBTOTAL										$762,926
B. BULK SOLIDS HANDLING AREA										
(1) Inventory Management										
(a) Transport of Bulk Solids	ton	200					35	500	$3.50	$10,500
(b) Landfilling of Bulk Solids \e	ton	200	$125							$25,000
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	3,860		50	77	$37.50				$2,895
(b) Containment Area Rinsing	sq. ft.	2,155		50	43	$37.50				$1,616
(c) Transport of Rinse Waters \f	gal	24,060					6,000	250	$3.50	$4,375
(d) Off-Site Trtmt of Rinse Waters \e	gal	24,060	$0.50							$12,030
BULK SOLIDS HANDLING AREA - SUBTOTAL										$56,416

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
C. INORGANIC TANK FARM										
(1) Inventory Management										
(a) On-Site Waste Treatment \h	gal	112,000	$0.15							$16,800
(b) Transport of Residuals \i	ton	93					35	500	$3.50	$5,250
(c) Landfilling of Residuals \e	ton	93	$125							$11,667
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	12,075		50	242	$37.50				$9,056
(b) Containment Area Rinsing	sq. ft.	6,325		50	127	$37.50				$4,744
(c) On-Site Trtmt of Rinse Waters \f,h	gal	73,600	$0.15							$11,040
							INORGANIC TANK FARM - SUBTOTAL			$58,557
D. NON-PUMPABLE WASTE HANDLING AREA										
(1) Inventory Management										
(a) On-Site Waste Treatment \h	gal	26,000	$0.15							$3,900
(b) Transport of Residuals \i	ton	22					35	500	$3.50	$1,750
(c) Landfilling of Residuals \e	ton	22	$125							$2,708
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	3,000		50	60	$37.50				$2,250
(b) Containment Area Rinsing	sq. ft.	1,865		50	37	$37.50				$1,399
(c) On-Site Trtmt of Rinse Waters \f,h	gal	19,460	$0.15							$2,919
					NON-PUMPABLE WASTE HANDLING AREA - SUBTOTAL					$14,926
						TANK FARMS/HANDLING AREAS - TOTAL				$892,825

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
3. INORGANIC TREATMENT SYSTEM										
A. INORGANIC TREATMENT REACTOR FARM										
(1) In-Process Waste Management										
(a) On-Site Waste Treatment \h	gal	32,000	$0.15							$4,800
(b) Transport of Residuals \i	ton	27					35	500	$3.50	$1,750
(c) Landfilling of Residuals	ton	27	$125							$3,333
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	3,450		50	69	$37.50				$2,588
(b) Containment Area Rinsing	sq. ft.	3,128		50	63	$37.50				$2,346
(c) Transport of Rinse Waters \f	gal	26,312					6,000	250	$3.50	$4,375
(d) Off-Site Trtmt of Rinse Waters \e	gal	26,312	$0.20							$5,262
					INORGANIC TREATMENT REACTOR FARM - SUBTOTAL					$24,454
B. SLUDGE DEWATERING AREA										
(1) In-Process Waste Management										
(a) Sludge Dewatering of Wastes \d	gal	66,000	$0.05							$3,300
(b) Transport of Residuals \i	ton	55					35	500	$3.50	$3,500
(c) Landfilling of Residuals \e	ton	55	$125							$6,875
(2) Decontamination										
(a) Tank/Ancillary Eqmt Rinsing \g	sq. ft.	4,890		50	98	$37.50				$3,668
(b) Containment Area Rinsing	sq. ft.	4,070		50	81	$37.50				$3,053
(c) Transport of Rinse Waters \f	gal	35,840					6,000	250	$3.50	$5,250
(c) Off-Site Trtmt of Rinse Waters	gal	35,840	$0.20							$7,168
						SLUDGE DEWATERING AREA - SUBTOTAL				$32,813

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
						INORGANIC TREATMENT SYSTEM - TOTAL				$57,267
4. INCINERATION SYSTEM										
A. COMBUSTION UNIT (KILN & SCC)										
(1) Unit Management										
(a) Refractory Removal \d	sq. ft.	3,595	$3.50							$12,583
(b) Transport of Refractory \j	ton	59					35	500	$3.50	$3,500
(c) Landfilling of Refractory \e	ton	59	$125							$7,415
(2) Decontamination										
(a) Ancillary Equipment Rinsing \k	sq. ft.	1,798		50	36	$37.50				$1,348
(b) Base Rinsing	sq. ft.	5,135		50	103	$37.50				$3,851
(c) Transport of Rinse Waters \f	gal	27,730					6,000	250	$3.50	$4,375
(d) Off-Site Trtmt of Rinse Waters \e	gal	27,730	$0.20							$5,546
							COMBUSTION UNIT - SUBTOTAL			$38,618
B. AIR POLLUTION CONTROL (APC) UNIT										
(1) Decontamination										
(a) APC Equipment Rinsing	sq. ft.	11,515		50	230	$37.50				$8,636
(b) Base Rinsing	sq. ft.	9,880		50	198	$37.50				$7,410
(c) Transport of Rinse Waters \f	gal	85,580					6,000	250	$3.50	$13,125
(d) Off-Site Trtmt of Rinse Waters \e	gal	85,580	$0.20							$17,116
								APC UNIT - SUBTOTAL		$46,287
							INCINERATION SYSTEM - TOTAL			$84,905

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
5. LABORATORY										
(1) Chemical and Equipment Mgmt \1										
(a) Chemical and Equipment Packaging	hours	72	$25.00							$1,800
(b) Transport of Chemical Containers	drums	20					80	500	$3.50	$1,750
(c) Incineration of Chem. Cont's \e	drums	20	$500							$10,000
(d) Transport of Equipment Cases	drums	40					80	250	$3.50	$875
(e) Sale of Equipment for Re-use	drums	40								$0
(2) Decontamination										
(a) Area Rinsing	sq. ft.	7,040		50	141	$37.50				$5,280
(b) Transport of Rinse Waters \f	gal	28,160					6,000	250	$3.50	$4,375
(c) Off-Site Trtmt of Rinse Waters \e	gal	28,160	$0.20							$5,632
							LABORATORY - TOTAL			$29,712

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
6. LOADOUT AND UNLOADING AREAS										
A. TRUCK & LUGGER BOX STAGING AREA										
(1) Residual Management										
(a) Transport of Residuals	ton	350					35	500	$3.50	$17,500
(b) Landfilling of Residuals \e	ton	350	$125							$43,750
(2) Decontamination										
(a) Area Rinsing	sq. ft.	7,565		50	151	$37.50				$5,674
(b) Transport of Rinse Waters \f	gal	30,260					6,000	250	$3.50	$5,250
(c) Off-Site Trtmt of Rinse Waters \e	gal	30,260	$0.20							$6,052
					TRUCK & LUGGER BOX STAGING AREA - SUBTOTAL					$78,226
B. KILN ASH LOADOUT AREA										
(1) Residual Management										
(a) Transport of Residuals	ton	70					35	500	$3.50	$3,500
(b) Landfilling of Residuals \e	ton	70	$125							$8,750
(2) Decontamination										
(a) Area Rinsing	sq. ft.	945		50	19	$37.50				$709
(b) Transport of Rinse Waters \f	gal	3,780					6,000	250	$3.50	$875
(c) Off-Site Trtmt of Rinse Waters \e	gal	3,780	$0.20							$756
							KILN ASH LOADOUT AREA - SUBTOTAL			$14,590

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
C. DRIED SOLIDS LOADOUT AREA										
(1) Residual Management										
(a) Transport of Residuals	ton	70					35	500	$3.50	$3,500
(b) Landfilling of Residuals \e	ton	70	$125							$8,750
(2) Decontamination										
(a) Area Rinsing	sq. ft.	945		50	19	$37.50				$709
(b) Transport of Rinse Waters \f	gal	3,780					6,000	250	$3.50	$875
(c) Off-Site Trtmt of Rinse Waters \e	gal	3,780	$0.20							$756
						DRIED SOLIDS LOADOUT AREA - SUBTOTAL				$14,590
D. FILTER CAKE LOADOUT AREA										
(1) Residual Management										
(a) Transport of Residuals	ton	70					35	500	$3.50	$3,500
(b) Landfilling of Residuals \e	ton	70	$125							$8,750
(2) Decontamination										
(a) Area Rinsing	sq. ft.	1,330		50	27	$37.50				$998
(b) Transport of Rinse Waters \f	gal	5,320					6,000	250	$3.50	$875
(c) Off-Site Trtmt of Rinse Waters \e	gal	5,320	$0.20							$1,064
						FILTER CAKE LOADOUT AREA - SUBTOTAL				$15,187

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
E. RESIDUE STORAGE AREAS (2)										
(1) Residual Management										
(a) Transport of Residuals \m	cub. yd	15,504					36	500	$3.50	$753,667
(b) Landfilling of Residuals \e	cub. yd	15,504	$125							$1,938,000
(2) Decontamination										
(a) Area Rinsing	sq. ft.	76,280		50	1,526	$37.50				$57,210
(b) Transport of Rinse Waters \f	gal	305,120					6,000	250	$3.50	$44,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	305,120	$0.20							$61,024
						RESIDUE STORAGE AREAS (2) - SUBTOTAL				$2,854,526
F. SOLIDIFICATION AREA										
(1) Residual Management										
(a) Transport of Residuals	ton	250					35	500	$3.50	$14,000
(b) Landfilling of Residuals \e	ton	250	$125							$31,250
(2) Decontamination										
(a) Area Rinsing	sq. ft.	1,735		50	35	$37.50				$1,301
(b) Transport of Rinse Waters \f	gal	6,940					6,000	250	$3.50	$1,750
(c) Off-Site Trtmt of Rinse Waters \e	gal	6,940	$0.20							$1,388
						SOLIDIFICATION AREA - SUBTOTAL				$49,689

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
G. ORGANIC TANK TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	3,600		50	72	$37.50				$2,700
(b) Transport of Rinse Waters \f	gal	14,400					6,000	250	$3.50	$2,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	14,400	$0.20							$2,880
						ORGANIC TANK TRUCK STATION - SUBTOTAL				$8,205
H. ORGANIC CONTAINER TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	1,755		50	35	$37.50				$1,316
(b) Transport of Rinse Waters \f	gal	7,020					6,000	250	$3.50	$1,750
(c) Off-Site Trtmt of Rinse Waters \e	gal	7,020	$0.20							$1,404
					ORGANIC CONTAINER TRUCK STATION - SUBTOTAL					$4,470
I. BULK SOLIDS TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	1,735		50	35	$37.50				$1,301
(b) Transport of Rinse Waters \f	gal	6,940					6,000	250	$3.50	$1,750
(c) Off-Site Trtmt of Rinse Waters \e	gal	6,940	$0.20							$1,388
						BULK SOLIDS TRUCK STATION - SUBTOTAL				$4,439
J. TANK RAILCAR FACILITY										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	3,520		50	70	$37.50				$2,640
(b) Transport of Rinse Waters \f	gal	14,080					6,000	250	$3.50	$2,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	14,080	$0.20							$2,816
						TANK RAILCAR FACILITY - SUBTOTAL				$8,081

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
K. CONTAINER RAILCAR FACILITY										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	3,520		50	70	$37.50				$2,640
(b) Transport of Rinse Waters \f	gal	14,080					6,000	250	$3.50	$2,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	14,080	$0.20							$2,816
						CONTAINER RAILCAR FACILITY - SUBTOTAL				$8,081
L. INORGANIC TANK TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	3,505		50	70	$37.50				$2,629
(b) Transport of Rinse Waters \f	gal	14,020					6,000	250	$3.50	$2,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	14,020	$0.20							$2,804
						INORGANIC TANK TRUCK STATION - SUBTOTAL				$8,058
M. INORGANIC TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	785		50	16	$37.50				$589
(b) Transport of Rinse Waters \f	gal	3,140					6,000	250	$3.50	$875
(c) Off-Site Trtmt of Rinse Waters \e	gal	3,140	$0.20							$628
						INORGANIC TRUCK STATION - SUBTOTAL				$2,092
N. INORGANIC CONTAINER TRUCK STATION										
(1) Decontamination										
(a) Area Rinsing	sq. ft.	3,840		50	77	$37.50				$2,880
(b) Transport of Rinse Waters \f	gal	15,360					6,000	250	$3.50	$2,625
(c) Off-Site Trtmt of Rinse Waters \e	gal	15,360	$0.20							$3,072
						INORGANIC CONTAINER TRUCK STATION - SUBTOTAL				$8,577
						LOADOUT AND UNLOADING AREAS -TOTAL				$3,078,810

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
7. GENERAL FACILITY ITEMS										
A. MISCELLANEOUS RESIDUES										
(a) Container Loading \d,n	no.	28	$1.30							$36
(b) Transport of Containerized Residue	no.	28					80	500	$3.50	$1,750
(c) Off-Site Incineration of Residue \e	no.	28	$500							$14,000
						MISCELLANEOUS RESIDUES - SUBTOTAL				$15,786
B. CONTAMINATED STORMWATER										
(a) Transport of Stormwater \o	gal	262,058					6,000	250	$3.50	$38,500
(b) Off-Site Treatment of Stormwater \e	gal	262,058	$0.50							$131,029
						CONTAMINATED STORMWATER - SUBTOTAL				$169,529
C. UTILITIES										
(a) Use of Misc. Equipment/Fixtures \p	days	180	$120							$21,600
							UTILITIES - SUBTOTAL			$21,600
							GENERAL FACILITY ITEMS -TOTAL			$206,915

FLORIDA FIRST PROCESSING, INC.

CLOSURE COST ESTIMATE

ITEM	UNITS	QUANTITY	COST/UNIT	QTY/HOUR \a	HOURS	COST/HOUR \b	TRANPORT CAPACITY	MILES	COST/MILE \c	EFFECTIVE COST
8. ADMINISTRATION										
(a) Clerical \d,q	hours	416	$20							$8,320
(b) Supervision \r	hours	2,080	$30							$62,400
(c) Certification \s	hours	208	$110							$22,880
							ADMINISTRATION - TOTAL			$93,600

BASES FOR ESTIMATIONS:

\a Quantity per hour estimated in "Final Report/Guidance Manual: Cost Estimates for Closure and Post Closure Plans (Subpart G and H) Volume III - Unit Costs," Pope-Reid Associates, Inc., Nov 1986.

\b Costs include labor rates for an operator ($25/hr quoted in "1988 Dodge Heavy Construction Cost Data," McGraw-Hill), decon. equipment rental ($55/day compressor, $10/day air hose, $10/day water hose, $25 misc. quoted in "1989 Means Mechanical Cost Data," R.S. Means Company, Inc.), and negligible materials cost.

\c Estimates of cost per loaded mile based on "1986-1987 Survey of Selected Firms in the Commercial Hazardous Waste Management Industry," U.S. EPA Office of Policy Analysis, prepared by ICF Incorporated, March 31, 1988.

\d Unit costs based on engineering judgement of prices quoted in Guidance Manual (cited in \a), rounded up and adjusted for inflation using the "Engineering News Record" Construction Cost Index in Apr 3, 1986 and the forecast for Dec 1989 made in Dec 15, 1988.

\e Unit cost based on engineering judgement of price ranges quoted in Survey (cited in \c).

\f Volume of rinse waters from decontamination of surfaces, e.g., bases, walls, tanks, ancillary equipment, spray dryer absorber, fabric filter, stack (4 gal/sq. ft.) and/or containers (10 gal/container) estimated in Guidance Manual (cited in \a).

\g Surface area of tanks based on engineering judgement of estimates using tank capacity and dimensions given in Guidance Manual, and an additional one half of that area to account for associated pumps, feed lines, etc.

\h Unit cost based on engineering judgement of specifications of on-site inorganic treatment (7,000 gal/8-hr shift, 2 operators/shift, $25/operator, $150/shift equipment, $150/day reagents) and estimates given in Guidance Manual for sludge dewatering ($0.05/gal); on-site treatment will be conducted since it is highly improbable that all 4 treatment reactors are inoperable at closure.

\i Volume of filter cake estimated in Guidance Manual (cited in \a) to be 1/6 of treated waste.

\j Weight of refractory estimated in Guidance Manual to be 33 lbs per square foot of surface area.

\k Surface area of pumps, feed lines, etc., based on engineering judgement, is approximately equal to half the area of the rotary kiln and secondary combustion chamber (SCC) as estimated from kiln and SCC dimensions.

\l Estimates of time taken, and quantity of chemical containers and equipment cases based on engineering judgement of typical labs.

\m These residuals will be stored in 6 cubic yd. containers and transported 6 containers per load.

\n Estimate of 1 container/operating area based on engineering judgement of closure procedures.

\o Estimate of 28 inches of rain over the 180-day closure period based on a normal annual rainfall of 56 inches as interpolated from graph in "Climatic Atlas of the United States," U.S. Department of Commerce, Environmental Science Services Administration, 1983; the only uncovered area in the facility will be the incinerator area.

\p Cost of utilities given in Means Guide (cited in \b), i.e., $76/day heat, $20/day lighting, $24/day misc.

\q Labor rates of clerical staff for 16 hours per week over the 26-week closure period.

\r Labor rates given in Dodge Guide (cited in \b) of two foremen for 5 days per week over closure period.

\s Labor rates, given in Dodge Guide, of a registered professional engineer for two 4-hour visits per week over closure period.

FLORIDA FIRST PROCESSING, INC.

APPENDIX I-2

CLOSURE COST ESTIMATE

Date: 5/31/89
Revision: 0

4.7 GENERAL FACILITY ITEMS

Other facility areas and items not addressed in the previous sub-sections are described below.

4.7.1 Miscellaneous Residues

After all facilities have been clean-closed, there may some miscellaneous residues remaining from the decontamination procedures. Approximately one container filled with residues such as contaminated rags will be collected from each area of the facility. These containers of such residues will be accumulated from each area and transported together to an appropriate off-site treatment, storage, and disposal facility.

4.7.2 Contaminated Stormwater

In the event of precipitation before the incinerator area (which is the only hazardous waste management area that is uncovered) is decontaminated, all contaminated stormwater flowing from the catch basin in the incinerator area into the stormwater run-off holding basin will be handled as a hazardous waste and disposed appropriately on-site if the incineration system is not already shut down or off-site at an approved treatment, storage, and disposal facility.

4.7.3 Absence of Contaminated Soils

At the proposed facility, all waste management areas will have concrete bases or secondary containment systems, and all roads will be paved with asphalt. These concrete bases, secondary containment systems, and pavements will be inspected regularly to prevent and remedy any developing cracks, as laid out in the Inspection Plan (Appendix F). As shown in the tank pinhole calculations at the end of Appendix D-2, areas outside the secondary containment curbs will be paved with asphalt to prevent any tank leaks from reaching exposed soil. The amount of asphalt will be extended beyond the extreme distances estimated by the conservative pinhole calculations (ignoring tank materials roughness and exit energy losses which will reduce the distance leaks actually travel) to consider the effect of splashing at impact. Any spills occurring outside containment areas will be temporarily contained with spill response equipment such as sand bags, and immediately cleaned up according to the procedures provided in the Contingency Plan (Section G). It is unlikely that any soil will be contaminated with hazardous wastes since these safety and contingency measures will be conscientiously implemented throughout the life of the facility. No contaminated soil removal is therefore anticipated.

5.0 CLOSURE ADMINISTRATION

The procedures described in Section 4.0 above describe the manner in which this Closure Plan will be implemented to completely clean-close FFPI. To achieve the closure performance standard, required under 40 CFR 264.111, these closure procedures will be administered and closely supervised to remove or destroy all wastes and residues so that the threat to public health and the environment from post-closure escape of wastes is minimized. Only decontaminated units, structures, and fixed equipment may be left in place at the site.

The Closure Plan will be kept in the facility offices for use during closure activities. Each sub-section in Section 4.0 can be pulled out for instructions on closure of specific units during unit closure or as sequential steps for full closure. The Facility Manager or designee has the responsibility to ensure that the procedures laid out in the Closure Plan are followed to the best extent possible.

If the Closure Plan is amended, the administrative procedures for permit modifications as stated in 40 CFR 270.41 and 42, and F.A.C. 17-30.290, will be followed. The determination whether the modification is major or minor will be made at the time of the amendments. All such permit modification requests will be directed to the Florida Department of Environmental Regulation (FDER) and the U.S. EPA Regional Administrator at Region IV at least 60 days before a proposed change in facility design or operation, and no later than 60 days after an unexpected event has occurred which affects the Closure Plan. During unit or final closure, FFPI will request a permit modification no later than 30 days after any unexpected event. Reporting deadlines are given in Table 5-1.

TABLE 5-1

CLOSURE PLAN REPORTING DEADLINES

Item	Time Before/After Event
Closure Plan Modification	
Planned Changes	> 60 days before
Unexpected Changes:	
Before Closure	< 60 days after
During Closure	< 30 days after
Closure	
Closure Activities	> 45 days before
Certification after Closure	< 60 days after

In accordance with 40 CFR 264.112, FFPI will notify the FDER and the U.S. EPA Regional Administrator at Region IV in writing at least 45 days before closure activities are expected to begin. All hazardous waste inventory will be processed on-site or removed to approved off-site treatment, storage and disposal facilities within 90 days of the receipt of the final waste shipment or 90 days after the approval of the Closure Plan, whichever is later. Also in accordance with 40 CFR 264.113, all closure activities will be completed within 180 days of the receipt of the final waste shipment or 180 days after the approval of the Closure Plan, whichever is later. The closure schedule developed for FFPI, in accordance with 40 CFR 264.112(b)(6), is shown in Table 5-2. In the event that closure activities require a longer time frame, FFPI will follow extension application procedures outlined in 40 CFR 264.113.

A closure certification by an independent registered professional engineer and FFPI that meets the specifications of 40 CFR 264.115 will be submitted within 60 days of the completion of full closure activities conducted according to the Closure Plan.

TABLE 5-2

FFPI CLOSURE SCHEDULE

Scheduled Event	Days after Closure Initiation
On-site or off-site inorganic treatment and incineration of final volume of hazardous waste.	0-40
On-site or off-site disposal or re-use of empty containers.	40-50
Decontamination of container staging and processing areas, and tank farms (e.g., tanks, ancillary equipment, secondary containment systems).	50-70
Final on-site incineration or inorganic treatment of decontamination rinse waters and residues (Planned Procedure; Alternative is off-site disposal).	70-90
Decontamination of Incinerator System and inorganic treatment reactors	90-120
Decontamination of laboratory	120-130
Decontamination of loadout areas and loading/unloading stations	130-150
Off-site disposal of all process water, cooling water, sump liquids, filter cake and effluent water, incinerator wastewater and ash residues, laboratory chemicals, and decontamination rinse waters.	150-170
Closure Certification.	180

4.6 LOADOUT AREAS AND TRUCK STATIONS/RAILCAR FACILITIES

The loadout areas will receive all the process residuals (e.g., kiln ash, dried solids from the spray dryer absorber and the bag filters, and filter cake) generated during site operations and activities to close the process units. The loading stations will be used to receive the final waste load and to ship out decontamination residues. The following procedures will be followed in decontaminating these loadout areas and the truck and railcar loading stations.

4.6.1 Residual Management

All residuals will be loaded onto trailer trucks or railcars for shipment off-site to appropriate storage, and disposal facilities. Careful attention will be paid so that the concrete bases and secondary containment systems are clean of any residues. If necessary, remnants will be scraped and brushed off from the surfaces of the loadout areas and loading stations.

4.6.2 Secondary Containment Area Decontamination

Once the residuals are removed from any of these areas, that particular area will be ready for decontamination. Each of the loadout areas will be similarly cleaned after they are emptied. The loading stations will already be empty and ready for decontamination since no residuals are staged there. A high-pressure cleaning system will be used to rinse the areas once with hot detergent and then twice with clean water. The resulting rinse waters will be approximately 4 gallons per square foot of surface. The loadout areas and loading stations will be considered decontaminated once the rinse waters and residuals are transferred from these areas to appropriate off-site treatment, storage, and disposal facilities.

4.5 LABORATORY

The facility laboratory will be neatly maintained throughout its operating life, so there will be little to decontaminate at the time of closure. Closure of this laboratory will commence after all storage and processing areas have been decontaminated.

4.5.1 Laboratory Chemical and Equipment Removal

The complete laboratory chemical inventory will be collected in appropriate containers such as lab packs and disposed at an approved treatment, storage, and disposal facility. All laboratory equipment will be cleaned, if necessary, according to standard laboratory practice using solvents and cleaners such as ethyl alcohol. This clean equipment will then be packed away and transported off-site to be scrapped or sold for re-use. Any salvage value obtained is not incorporated into the Closure Cost Estimate.

4.5.2 Surface Decontamination

All exposed surfaces (e.g., floor, walls, counter tops) will be brushed and scraped to remove any materials stuck to these surfaces. Once all visible residue is removed, the surfaces will be decontaminated with a high-pressure wash using a hot soapy detergent rinse followed by two clean water rinses. The rinse waters used will be approximately 4 gallons per square foot of surface decontaminated. The rinsewater and residues will be collected and disposed as hazardous wastes at an appropriate off-site facility.

4.4 INCINERATION SYSTEM

The incinerator, and associated equipment and structures, will be decontaminated according to the procedures laid out below.

4.4.1 Incineration Unit Decontamination

The kiln feed lines, rotary kiln incinerator, secondary combustion chamber, and pollution control devices are components of the incineration unit. During closure operations, FFPI plans to operate the incineration unit at the conditions specified in its operating permit. The final waste inventory will be incinerated under normal operating conditions, and the resulting ash will be collected from the kiln ash hopper, combined with collected particulate matter and decontamination residue such as gloves and rags, and disposed as hazardous waste.

The kiln feed lines will be flushed with fuel oil. The oil will be pumped through these feed lines and burner nozzle to clean out the lines and the burner nozzles. The feed lines and burner nozzles will be flushed three times with a quantity of fuel oil equal to about 10% of the volume of the tanks preceding the lines. This oil will then be burned through the incineration system.

The rotary kiln incinerator will be decontaminated after the incineration of the final waste receipt and the flushing of the kiln feed lines. Clear fuel oil will be burned in the incinerator for 48 hours to ensure that all hazardous waste constituents remaining in the kiln and secondary combustion chamber are completely destroyed. No ash is expected to be generated into the kiln ash hopper during this clean burning period. Any particulate matter which may be produced will be captured in the air pollution control system.

That control system will be decontaminated according to the procedures in Section 4.4.2.

Another scenario that the facility is prepared to respond to is if the incineration system is inoperable at the time of closure. In that case, the feed line flushings will be collected and disposed at a permitted off-site facility. The incinerator will be dismantled and landfilled as equipment contaminated with hazardous wastes at RCRA disposal facility.

4.4.2 Air Pollution Control System Decontamination

After the flushing oils and rinseates have been burned or appropriately disposed and the incineration system shut down, the spray dryer and scrubber water system will be drained. Fabric filter ash and fabric filters will be removed and disposed at an off-site hazardous waste management facility. The induced draft fan will be left undisturbed. The complete air pollution control system will then be thoroughly flushed with three rinses of clean water and left in place at the facility. All the drained fluids and rinse waters will be collected for off-site disposal at approved facilities.

4.4.3 Concrete Base Decontamination

During the decontamination process, any evidence of possible contamination on the concrete base of the incineration system area will be cleaned up. The clean-up crew will use solvent (e.g., kerosene) on the surface followed by a rinse with hot soapy water and two rinses of clean water. The volume of rinse waters used be approximately 4 gallons per square foot of area decontaminated. All the collected rinse waters will be disposed at an appropriate permitted facility.

4.3 INORGANIC TREATMENT SYSTEM

All four of the inorganic treatment reactors in the Inorganic Treatment Reactor Farm and the four tanks in the Sludge Dewatering Area will be decontaminated and closed according to the procedures given below.

4.3.1 Reactor/Tank and Ancillary Equipment Decontamination

The last batch of waste will be processed through the inorganic treatment system. After the final waste inventory has been processed through the inorganic treatment reactors and filter feed/filtrate holding tanks, the manways of the empty reactors/tanks will be opened so that positive ventilation can be provided to purge the reactors of toxic or explosive gases. The reactors' interiors will be visually inspected to assess the quantity and properties of any residues. Residues will be removed, as necessary, using scrapers, pumps, vacuum trucks, or other appropriate equipment. All entry into reactors must be authorized and supervised according to the confined space/limited egress procedures given in Attachment I-1.

After removing as much residue as possible, the interior of the reactors will be decontaminated using one rinse of appropriate cleaning solvent followed by two clean water rinses applied by a high pressure wash or steam cleaning system. The detergent and water will be flushed through the ancillary equipment (e.g. agitators, piping, hoses) as well to decontaminate such equipment along with their associated reactors. The residuals generated during reactor and ancillary equipment decontamination will amount to approximately 4 gallons per square foot of surface. The rinse waters from inorganic treatment reactors will be disposed off-site as hazardous waste. Residues generated during reactor closure (e.g., contaminated scrapers, rags) will be incinerated on-site along with other decontamination rinse waters or will be taken off-site for disposal at an appropriate permitted facility.

The reactors and ancillary equipment will be left to air dry for a few days. The reactors and all ancillary piping, fittings and pumping equipment decontaminated along with the reactors will be left in place. Alternatively, the reactors and ancillary equipment will be disconnected, removed, and sold for re-use or scrap once they are dry. Salvage revenues are not credited in the Closure Cost Estimate in Appendix I-2.

4.3.2 Secondary Containment Area Decontamination

After decontaminating the reactors and ancillary equipment, the secondary containment system will be examined for evidence of contamination or spills. Secondary containment structures (e.g., dike walls, floors, sumps) will be scrubbed down and pressure-washed with detergent, and then flushed with two other clean water rinses. The residuals generated during this high-pressure cleaning will amount to approximately 4 gallons per square foot of surface. The washing solution and rinse waters from the inorganic treatment secondary containment area will be transported off-site to an appropriate permitted treatment, storage, and disposal facility.

4.2 TANK FARMS AND HANDLING AREAS

The tanks in the organic, inorganic, bulk solids, and non-pumpable waste tank farms/handling areas will be emptied, decontaminated, and closed according to the following guidelines.

4.2.1 Inventory Management

The contents of each tank will be pumped out to the processing units, i.e., the incinerator or inorganic treatment reactors, using standard operating procedures. Alternatively, organic wastes will be pumped into bulk tank trucks or railcars for transportation to an appropriate off-site treatment, storage and disposal facility. It will be straightforward to use, primarily, facility operating records and, secondarily, prior waste characterization and analyses, to identify the tank contents so as to assess the appropriate disposition of these wastes. These records will be kept up-to-date in accordance with RCRA regulations. Any waste management activity during closure, including transfers and processing, will be performed following the normal operating procedures at the facility as described in Section D of this application.

4.2.2 Tank and Ancillary Equipment Decontamination

The empty tanks' manways will be opened so that positive ventilation can be provided to purge the tanks of toxic or explosive gases. The tanks' interiors will be visually inspected to assess the quantity and properties of any residues. Residues will be removed, as necessary, using scrapers, pumps, vacuum trucks, or other appropriate equipment. All entry into tanks must be authorized and supervised according to the confined space/limited egress procedures given in Attachment I-1.

After removing as much residue as possible, the interior of the tanks will be decontaminated using one rinse of appropriate cleaning solvent followed by two clean water rinses applied by a high pressure wash or steam cleaning system. The detergent and water will be flushed through the piping and hoses as well to decontaminate such ancillary equipment along with their associated tanks. The residuals generated during tank and ancillary equipment decontamination will amount to approximately 4 gallons per square foot of surface. The contaminated rinse waters from organic waste storage tanks will be collected and fed into the incinerator unit, or may be transported off-site to be disposed at an approved facility. The rinse waters from inorganic waste storage tanks will be disposed off-site as hazardous waste. Residues generated during tank closure (e.g., contaminated scrapers, rags) will be incinerated on-site along with other decontamination rinse waters or will be taken off-site for disposal at an appropriate permitted facility.

The tanks and ancillary equipment will be left to air dry for a few days. The tanks and all ancillary piping, fittings and pumping equipment decontaminated along with the tanks will be left in place. Alternatively, the tanks and ancillary equipment will be disconnected, removed, and sold for re-use or scrap once they are dry. Salvage revenues are not credited in the Closure Cost Estimate in Appendix I-2.

4.2.3 Secondary Containment Area Decontamination

After decontaminating the tanks and ancillary equipment, the secondary containment system will be examined for evidence of contamination or spills. Secondary containment structures (e.g., dike walls, floors, sumps) will be scrubbed down and pressure-washed with detergent, and then flushed with two other clean water rinses. The residuals generated during this high-pressure cleaning will amount to approximately 4 gallons per square foot of surface. The washing solution and rinse waters from the organic tank farms will be transferred to the on-site incinerator for processing, and those from the inorganic tank farm will be transported off-site to an appropriate permitted treatment, storage, and disposal facility. Another option would be to transport the residuals from both tank farms to off-site hazardous waste facilities.

4.1 CONTAINER STAGING AND PROCESSING AREAS

The organic and inorganic container staging areas, the container processing system (e.g., conveyor system, container emptying stations, waste receiving tanks, and associated areas will be decontaminated and closed according to the procedures outlined below, and in compliance with 40 CFR 264.114 and 264.178.

4.1.1 Inventory Management

All containers will be routed through the container processing system so that their contents can be emptied into storage or process tanks for on-site processing, or into bulk tank trucks or railcars for off-site disposal. The inorganic waste containers will be pumped out into storage or process tanks at either the alkaline/cyanide-containing or acidic/non-cyanide waste container emptying stations for processing through the inorganic treatment system. Organic waste containers will be pumped out into incinerator waste feed tanks, or left intact and conveyed into the kiln feed chute to be incinerated. Another option would be to load the containerized organic wastes onto container trucks or railcars for shipment off-site to an approved treatment, storage, and disposal facility.

4.1.2 Container and Waste Receiving Tank Decontamination

Any remaining containers which are empty will be processed along with the pallets through the container processing system to be shredded and fed into the incineration system. Alternatively, if the incineration system is not operational at the time of closure (the scenario used for the Closure Cost Estimate), the empty containers will be triple-rinsed, loaded on pallets and transported off-site for re-use at an appropriate facility.

The containerized waste receiving tanks in the processing areas will be emptied and opened so that positive ventilation can be provided to purge the tanks of toxic or explosive gases. The tanks' interiors will be visually inspected to assess the quantity and properties of any residues. Residues will be removed, as necessary, using scrapers, pumps, vacuum trucks, or other appropriate equipment. All entry into tanks must be authorized and supervised according to the confined space/limited egress procedures given in Attachment I-1.

After removing as much residue as possible, the interior of the tanks will be decontaminated using one rinse of appropriate cleaning solvent followed by two clean water rinses applied by a high pressure wash or steam cleaning system. The detergent and water will be flushed through the ancillary equipment (e.g. agitators, piping, hoses) as well to decontaminate such equipment along with their associated tanks. The residuals generated during tank and ancillary equipment decontamination will amount to approximately 4 gallons per square foot of surface. The rinse waters from inorganic treatment reactors will be disposed off-site as hazardous waste. Residues generated during tank closure (e.g., contaminated scrapers, rags) will be incinerated on-site along with other decontamination rinse waters or will be taken off-site for disposal at an appropriate permitted facility.

The tanks and ancillary equipment will be left to air dry for a few days. The tanks and all ancillary piping, fittings and pumping equipment decontaminated along with the tanks will be left in place. Alternatively, the tanks and ancillary equipment will be disconnected, removed, and sold for re-use or scrap once they are dry. Salvage revenues are not credited in the Closure Cost Estimate in Appendix I-2.

4.1.3 Secondary Containment Area Decontamination

Any remaining hazardous waste residue such as contaminated rags will be removed from these secondary containment areas at the container staging or processing areas. All process equipment (e.g., shredders, conveyors), pumps, ancillary equipment, and secondary containment structures (e.g., dike walls, floors, sumps) will be flushed with one detergent solution rinse and two clean water rinses. About 4 gallons of residuals per square foot of surface will be generated from the high-pressure cleaning process. Rinse waters from the three flushings will be collected along with the decontamination rinse waters and residues from other waste management areas and disposed as hazardous waste at an appropriate permitted facility.

Alternatively, all organic wastes in containers and tanks, and empty containers, will be sent off-site to appropriate permitted treatment, storage, and disposal facilities.

The container handling/processing system and the tanks, once emptied, will be decontaminated along with ancillary equipment and secondary containment structures according to the procedures outlined in Section 4.1 and 4.2. All tanks, ancillary equipment, and secondary containment structures will be flushed or washed down with three rinses of appropriate fluids as described in the following sections. Rinse waters from all three decontamination flushings will be collected and disposed of as hazardous wastes. Decontamination rinse waters (rinseates) and residues from the organic waste areas will be incinerated on-site. Decontamination rinse waters from the inorganic waste areas will be processed through the inorganic waste treatment reactors. Another option will be to dispose the decontamination rinse waters from the organic and inorganic waste areas off-site at approved facilities.

The inorganic treatment reactors will be decontaminated according to the procedures outlined in Section 4.3. The incineration system will be decontaminated according to the steps given in Section 4.4. The facility laboratory will then be cleared and decontaminated using the procedures in Section 4.5. All ancillary equipment and secondary containment systems will be decontaminated along with their related process or treatment units. The decontamination rinse waters and residues will be disposed as hazardous waste at an appropriate off-site facility.

The process residuals loadout areas and the loading stations will be emptied and decontaminated using the procedures in Section 4.6. When all the hazardous waste inventory, decontamination rinse waters, and residues have been processed or transferred off-site, the loading/unloading areas will be decontaminated. Finally, decontamination rinse waters and residues from the loading/unloading areas will be disposed of as hazardous waste at an appropriate permitted facility.

Stormwater that accumulates in areas that are not yet decontaminated will be treated as hazardous waste. Such stormwater will be collected and transported off-site for treatment or disposal. All unprocessable residues will be collected and disposed at approved off-site treatment, storage, and disposal facilities. FFPI does not anticipate that there will be any contaminated soils at the facility since all waste management areas are on or within concrete bases or secondary containment systems, and all roads are asphalt-paved. These miscellaneous facility items are addressed in Section 4.7.

Clean-up and decontamination will be performed under the Chief Engineer, with a Supervisor and at least two operators present. The closure personnel will be required to follow generally accepted health and safety procedures at all times. Personal protection equipment (e.g., self-contained breathing apparatus, neoprene gloves and impermeable protective clothing) will be provided for use whenever necessary, as laid out in the OSHA guidelines. Prior to leaving the decontamination area, all personnel will be decontaminated using detergent solution in drip pans, portable showers, or some other reasonable and approved procedure.

Certification of the completeness of closure will be obtained from an independent registered professional engineer and submitted to the Florida Department of Environmental Regulation once every waste management area has been decontaminated and all wastes and residuals removed.

TABLE 3-2

"INORGANIC" WASTE TANKS

Tank Numbers	Tank Description	Construction Material	Quantity	Capacity
	<u>Dried Solids System</u>			
T01	Storage Silo	Carbon Steel*	1	5,000 gal
T02	Recycle Silo	Carbon Steel*	1	5,000 gal
	Recycle Suspension Tank	Carbon Steel*	1	3,000 gal
	<u>Container Processing Area</u>			
T-21	Alkaline Containerized Waste Receiving Tank	FRP	1	2,000 gal
T-22	Acidic Containerized Waste Receiving Tank	FRP	1	2,000 gal
	<u>Non-Pumpable Waste Handling Area</u>			
T-07	Alkaline Waste Dissolving Tank	Carbon Steel*	1	5,000 gal
T-08	Acidic Waste Dissolving Tank	Carbon Steel*	1	5,000 gal
T-23	Dissolved Alkaline Waste Holding Tank	FRP	1	8,000 gal
T-24	Dissolved Acidic Waste Holding Tank	FRP	1	8,000 gal
	<u>Inorganic Tank Farm</u>			
T-25 to 30	Chromate Waste Storage Tanks	FRP	6	8,000 gal
T-31 to 34	Acidic Waste Storage Tanks	FRP	4	8,000 gal
T-35, 36	Alkaline Waste Storage Tanks	FRP	2	8,000 gal
T-37, 38	Cyanide Waste Storage Tanks	FRP	2	8,000 gal
	<u>Reactor Farm</u>			
T-44 to 46	Multi-purpose Reactors	FRP	3	8,000 gal
T-47	Cyanide Waste Reactor	FRP	1	8,000 gal
	<u>Sludge Dewatering Area</u>			
T-48, 49	Filter Feed Tanks	Carbon Steel*	2	25,000 gal
T-50, 51	Filtrate Holding Tanks	Carbon Steel*	2	8,000 gal
	<u>Reagent Tank Farm (non-RCRA)</u>			
	Reagent Storage Tanks	FRP	3	8,000 gal

* Coated for corrosion protection; i.e., epoxy coated or equivalent.

TABLE 3-1

"ORGANIC" WASTE TANKS

Tank Numbers	Tank Description	Construction Material	Quantity	Capacity
	<u>Container Processing Area</u>			
T-09	Containerized Waste Receiving Tank	Carbon Steel	1	2,000 gal
	<u>Organic Tank Farm</u>			
T-10 to 12	Low Btu Holding Tanks	Carbon Steel	3	20,000 gal
T-13 to 15	High-Btu Holding Tanks	Carbon Steel	3	20,000 gal
T-16	Sludge Holding Tank	Carbon Steel	1	20,000 gal
T-17	Sludge Feed Tank	Carbon Steel	1	8,000 gal
T-18	Low-Btu Mix/Feed Tank	Carbon Steel	1	20,000 gal
T-19, 20	High-Btu Mix/Feed Tanks	Carbon Steel	2	20,000 gal
	Fuel Oil Tank (Non-RCRA)	Carbon Steel	1	20,000 gal
	<u>Bulk Solids Handling Area</u>			
	Shredded Material Tank	Concrete	1	25 yd^3
	Bulk Solids Receiving Tanks	Concrete	3	50 yd^3
	Mixed Feed Tank	Concrete	1	25 yd^3

3.0 MAXIMUM EXTENT OF OPERATIONS

The extent of the facility operations at any given time will be limited by the storage capacity of the container staging areas and tank farms, and the process rate capacity of the inorganic waste treatment plant and the incinerator. The design features of each of these units are provided in Section D of this application.

The maximum waste inventory stored at the Florida First Processing, Inc. will be 222,200 gallons contained in the equivalent of 4,040 55-gallon drums and 490,394 gallons contained in 45 tanks. The Organic Container Staging Area will hold 190,080 gallons and the Inorganic Container Staging Area will hold 32,120 gallons. Table 3-1 and 3-2 list the storage capacity in facility tanks. A maximum of 16,132 yd^3 of process residuals generated on site will be stored at the loadout areas described in Section D.6 of this permit application.

The first option for closure is to have all of this hazardous waste inventory processed on-site at the inorganic waste treatment plant and the incinerator. The alternative procedure, which is used as the highest cost scenario in the Closure Cost Estimate, assumes that all organic wastes will be sent off-site for disposal or treatment. Residues from waste treatment of the maximum inorganic waste inventory will be sent off-site to an appropriate permitted hazardous waste treatment, storage and disposal facility. Further details of the methods to be used for removing, transporting, treating, storing or disposing of all hazardous wastes are given in Section 4.0. Estimates of the maximum inventory of hazardous wastes ever on-site and the description of closure procedures is given in accordance with 40 CFR 264.112(b)(3).

2.0 FACILITY DESCRIPTION

The Florida First Processing, Inc. will be located along Fort Green Road between the towns of Brewster and Baird in Polk County, Florida.

The property on which the facility will be located is generally flat, with a slight slope to the west. The hazardous waste operations at the facility will be located outside of the 100-year flood plain. Land in the vicinity of the facility is generally used for phosphate mining. Additional details of the location of the facility relative to floodplain areas, surface water, surrounding land use, and other topographic features are given in Section B of this permit application.

The fully developed facility will receive virtually any type of hazardous wastes, with the exception of PCBs and high concentration dioxins for processing through the inorganic waste treatment plant or the incinerator. The complete description of hazardous wastes to be handled at the facility is provided in Section C of this application. Wastes will be received in bulk shipments (e.g., tanker trucks and rail car tankers) or in loads of containers (e.g., 55-gallon drums, and roll-off boxes on trucks or rail cars). FFPI is designed to handle waste liquids, sludges and solids.

Containerized wastes will be managed through the container processing system which will involve a conveyor system, container emptying stations, and container shredder. Bulk pumpable wastes will be transferred to storage tanks, or may be pumped directly into the inorganic waste treatment plant or the incinerator. The details of the waste management units and procedures at FFPI, including the size and dimensions of each unit/area, design capacity, types of ancillary equipment, and secondary containment systems, are provided in Section D of this permit application.

FLORIDA FIRST PROCESSING, INC.

APPENDIX I-1

CLOSURE PLAN

Date: 5/31/89
Revision: 0

CLOSURE PLAN

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I.3 FINANCIAL REQUIREMENTS

The documentation required by 40 CFR 264.143 will be provided in Appendix I-3. The FFPI owner will establish financial assurance for closure of the facility using either a trust fund, a surety bond, closure insurance, a financial test and corporate guarantee for closure, or some combination of the above. The financial assurance will be in place and documentation provided to FDER prior to initiation of hazardous waste operations at the facility.

I.4 LIABILITY REQUIREMENT

The FFPI owner will take out liability insurance coverage for sudden accidental occurrences as required by 40 CFR 264.147. The liability coverage documentation of $1 million per occurrence with an annual aggregate of $2 million maintained for the facility will be provided in Appendix I-4. The insurance policy documentation will be submitted to the Florida Department of Environmental Regulation at least 60 days before the receipt of the first hazardous waste shipment.

SECTION I

CLOSURE PLAN AND FINANCIAL REQUIREMENTS

This section and related appendices present the closure-related information for the Florida First Processing, Inc. (FFPI) facility. The information is submitted in accordance with the requirements of 40 CFR 264 Subpart G and 40 CFR 270.14(b)(13) and (14) as incorporated by reference in F.A.C. 17-30.180 and 17-30.200 respectively. A Closure Permit required by F.A.C. 17-30.260 will be applied for at the time of facility closure, and the Florida Department of Environmental Regulation will be notified promptly according to regulatory schedules.

I.1 CLOSURE PLAN AND COST ESTIMATE

The Closure Plan in Appendix I-1 identifies the steps necessary to close FFPI or any unit within the facility at any point during or at the end of its intended operating lifetime. Unit closure procedures are similar to those that will be used during final facility closure. In conformance with the closure performance standard, this Plan ensures that FFPI will be properly closed so as to minimize the need for further maintenance, minimize threats to human health and the environment, and eliminate the potential for post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated run-off, or waste decomposition products to the ground or surface waters or to the atmosphere. This Plan also ensures compliance with the specific closure requirements for storage and process tanks specified in 40 CFR 264.197 and for incinerators specified in 40 CFR 264.351, both incorporated by reference in F.A.C. 17-30.180.

Job Title: Load/Unload Supervisor

Reports To: General Engineer

Job Description:

Responsible for overall management of all waste loading and unloading operations.

Requisite Skills:

a. Ability to design and implement proper forklift operation and loading/unloading procedures.

b. Ability to set task priorities and allocate time efficiently.

c. Well organized, neat, and orderly.

d. Ability to perform work quickly and safely.

e. Ability to plan actions to avoid risk and prevent accidents.

f. Experience in fire, explosion, and spill response and waste cleanup procedures.

g. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

b. Courses or experience in general hazardous waste management.

Duties:

a. Manage overall waste unloading operations from tank trucks, trucks carrying containerized wastes, tank railcars, and railcars carrying containerized wastes.

b. Manage overall waste loading operations into tanks in the tank farms, hoppers, and directly into incinerator and inorganic treatment systems.

c. Design and train personnel in proper forklift operation procedures. Document such training.

d. Design and implement proper loading/unloading operations. Document such training.

e. Coordinate validation of total number and contents of each incoming waste shipment in collaboration with waste receiving management.

f. Train Bulk Receiving Workers, Drum Receiving/Unloading Workers, Tank Farm Workers, Tank Truck/Railcar Operations, and Forklift Drivers in proper health and safety procedures to meet all OSHA requirements, and document such training.

g. Ensure that supervised workers and operators are trained in fire, explosion, and spill response and waste cleanup procedures.

h. Evaluate performance of supervised workers and operators every six (6) months.

Job Title: Bulk Receiving Worker

Reports To: Load/Unloading Supervisor

Job Description:

Prepare tanks, hoppers, direct burn line, and inorganic treatment system for receiving bulk wastes unloaded by the Tank Truck/Railcar Operators.

Requisite Skills:

a. Ability to inspect tanks for inappropriate labels, markings, or integrity.

b. Ability to plan actions to avoid risk and prevent accidents.

c. Well organized, neat, and orderly.

d. Familiar with fire, explosion, and spill response and waste cleanup procedures.

e. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

Duties:

a. Prepare the following receptacles/systems for receiving the corresponding bulk wastes unloaded by the Tank Truck/Railcar Operators:

   i. Tanks in the Organic Treatment Tank Farm for receiving bulk pumpable organics wastes (in collaboration with Tank Farm Workers);

   ii. Hoppers for receiving bulk non-pumpable bulk organic wastes;

   iii. Direct burn line of the incinerator system for receiving incompatible bulk organic wastes (in collaboration with Incinerator Operator);

   iv. Tanks in the Inorganic Treatment Tank Farm for receiving bulk pumpable inorganic wastes (in collaboration with Tank Farm Workers); and

   v. Inorganic treatment system for receiving bulk non-pumpable inorganic wastes (in collaboration with Inorganics Operator).

b. Perform related duties as requested by Load/Unload Supervisor.

Job Title: Drum Receiving/Unloading Worker

Reports To: Load/Unload Supervisor

Job Description:

Prepare Container Staging Areas for drums unloaded by Forklift Drivers. Prepare tanks in both the Organic and Inorganic Treatment Tank Farms for receiving wastes from the drums, and pump wastes from drums into tanks, in collaboration with Tank Farm Workers. Feed empty drums into drum shredders.

Requisite Skills:

a. Ability to inspect Container Staging Areas for leaks from drums, cracks in containment area, and accumulated liquids.

b. Ability to inspect tanks for inappropriate labels, markings, or integrity.

c. Ability to plan actions to avoid risk and prevent accidents.

d. Well organized, neat, and orderly.

e. Familiar with use of proper respiratory protection.

f. Familiar with fire, explosion, and spill response and waste cleanup procedures.

g. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

Duties:

a. Prepare and ready Container Staging Areas for drums unloaded by Forklift Drivers.

b. Prepare and ready tanks in both Organic and Inorganic Treatment Tank Farms for receiving wastes from the drums, and pump wastes from drums into tanks, in collaboration with Tank Farm Workers.

c. Feed empty drums into drum shredder.

d. Perform related duties as requested by Load/Unload Supervisor.

Job Title: Tank Farm Worker

Reports To: Load/Unload Supervisor

Job Description:

Maintain tank farm in clean condition. Responsible for feeding wastes into incinerator and inorganic treatment systems, in collaboration with Incinerator and Inorganics Operators.

Requisite Skills:

a. Ability to recognize hazardous conditions in tank farm (e.g., bulging drums, accumulated liquids).

b. Ability to plan actions to avoid risk and prevent accidents.

c. Well organized, neat, and orderly.

d. Familiar with fire, explosion, and spill response and waste cleanup procedures.

e. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

Duties:

a. Maintain tank farm in clean condition.

b. Responsible for feeding wastes to incinerator and inorganic treatment systems, in collaboration with incinerator and inorganics operators.

c. Perform related duties as requested by Load/Unload Supervisor.

Job Title: Forklift Driver

Reports To: Load/Unload Supervisor

Job Description:

Operate forklift during unloading of drums from trucks and railcars, as directed by the Load/Unload Supervisor.

Requisite Skills:

a. Mechanical aptitude and comprehension.

b. Ability to plan actions to avoid risk and prevent accidents.

c. Ability to perform work quickly and safely.

d. Well organized, neat, and orderly.

e. Ability to analyze equipment problems and reach sound conclusions about corrective action.

f. Familiar with fire, explosion, and spill response and waste cleanup procedures.

g. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

b. Experience in general mechanical maintenance preferred.

Duties:

a. Operate forklift during unloading of drums from trucks and railcars, as directed by Load/Unload Supervisor.

b. Perform periodic preventive maintenance on forklifts.

c. Perform related duties as requested by Load/Unload Supervisor.

Job Title: Tank Truck/Car Operator

Reports To: Load/Unload Supervisor

Job Description:

Unload bulk pumpable and non-pumpable wastes from tank trucks and tank railcars, in collaboration with Bulk Receiving Workers, as directed by Load/Unload Supervisor.

Requisite Skills:

a. Mechanical aptitude and comprehension.

b. Ability to plan actions to avoid risk and prevent accidents.

c. Ability to perform work quickly and safely.

d. Well organized, neat, and orderly.

e. Ability to analyze equipment problems and reach sound conclusions about corrective action.

f. Familiar with fire, explosion, and spill response and waste cleanup procedures.

g. Punctuality and good attendance.

Education Requirements:

a. High school education or equivalent.

b. Experience in pipe fitting and general mechanical maintenance.

Duties:

a. Unload bulk pumpable and non-pumpable wastes from tank trucks and tank railcars, in collaboration with Bulk Receiving Workers, as directed by the Load/Unload Supervisor.

b. Familiar with proper hose hook-up, unhooking, and buttoning up procedures.

c. Perform related duties as requested by Load/Unload Supervisor.

FLORIDA FIRST PROCESSING, INC.

APPENDIX H-2

HAZARDOUS WASTE MANAGEMENT POSITION DESCRIPTIONS

Date: 5/31/89
Revision: 0

TABLE H-1.3

FREQUENCY OF TRAINING

CODE	TRAINING COURSE	INITIAL TRAINING*	ON-JOB TRAINING	ANNUAL REFRESHER
A.	Introduction to Hazardous Waste Management	X	X	X
B.	Hazardous Waste Shipments to FFPI	X	X	X
C.	Tank Truck and Railcar Loading and Unloading Procedures		X	X
D.	Container Handling Procedures		X	X
E.	Safe Forklift Operation		X	X
F.	Inspection of Unloading & Staging Areas and Tank Farms		X	X
G.	Ignitability	X	X	X
H.	pH and Corrosivity	X	X	X
I.	Hot Work Policy/Procedures		X	X
J.	Confined Space Entry Procedures		X	X
K.	Line Breaking Procedures		X	X
L.	Electrical Changes in the Facility		X	X
M.	General Contingency Plan Training	X	X	X
N.	Basic Fire Fighting	X	X	X
O.	Response to a Hazardous Waste Spill or Release	X	X	X
P.	Basic Protective Clothing and Equipment (PPE) Training	X	X	X
Q.	Advanced PPE Training		X	X
R.	Serious Injury Notification Procedures	X	X	X
S.	Shutdown/Start-up Procedures		X	X

* = Orientation, Health & Safety Training, Contingency Plan Training.

TABLE H-1.1 (continued)

TRAINING COURSES

TRAINING COURSE CODE	SUBJECT MATTER OF TRAINING COURSE
S	SHUTDOWN/START-UP PROCEDURES
S.1	Definition of Regular and Emergency Shutdown Procedures
S.2	Regular Shutdown Procedures
S.3	Emergency Shutdown Procedures
S.4	Automatic Waste Feed and Transfer Cutoff Systems
S.5	Conditions That Activate Automatic Waste Feed and Transfer Cutoff Systems
S.6	Design of Different Types of Valves (e.g., Diaphragms, Solenoids, Fusible Elements
S.7	Operation/Activation of Different Types of Valves (e.g., those that are Hydraulically, Electrically, and Heat Activated)
S.8	Kinds of Valve Failure (e.g., Open Position, Closed Position)
S.9	Operation of Manual Overrides
S.10	Start-up Procedures

TABLE H-1.2

REQUIRED TRAINING COURSES FOR HAZARDOUS WASTE MANAGEMENT PERSONNEL

JOB POSITION	TRAINING COURSE CODES[a/]																		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1. Plant Manager	X	X				X	X	X	X	X			X	X	X	X	X	X	X
2. Chief Engineer	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Environmental/Health and Safety Manager	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. Emergency Coordinator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5. Laboratory Manager	X	X					X	X	X				X	X	X	X		X	X
6. Chemist	X	X					X	X	X				X	X	X	X		X	
7. Laboratory Technician	X	X					X	X	X				X	X	X	X		X	
8. Incinerator Engineer	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
9. Inorganics Engineer	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
10. General Engineer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11. Incinerator Supervisor	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
12. Inorganics Supervisor	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
13. Incinerator Maintenance Foreman	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
14. Inorganics Maintenance Foreman	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
15. Incinerator Maintenance Worker	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
16. Inorganics Maintenance Worker	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
17. Incinerator Operator	X	X		X		X	X	X		X			X	X	X	X	X	X	X
18. Inorganics Operator	X	X		X		X	X	X		X			X	X	X	X	X	X	X
19. Waste Receiving Engineer/Scientist	X	X		X		X	X	X					X	X	X	X		X	X
20. Waste Receiving Assistant	X	X		X			X	X					X	X	X	X	X	X	
21. Load/Unload Supervisor	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	X
22. Bulk Receiving Worker	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	
23. Drum Receiving/Unloading Worker	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	
24. Tank Farm Worker	X	X	X	X	X	X	X	X		X			X	X	X	X	X	X	
25. Forklift Driver	X	X		X	X		X	X		X			X	X	X	X	X	X	
26. Tank Truck/Railcar Operator	X	X	X	X			X	X		X			X	X	X	X	X	X	

[a/] See Table H-1.1 (or Table H-1.3) for explanation of Training Course Codes.

TABLE H-1.1 (continued)

TRAINING COURSES

TRAINING COURSE CODE	SUBJECT MATTER OF TRAINING COURSE
E	SAFE FORKLIFT OPERATION
E.1	Features of a Forklift
E.2	Responsibilities of a Forklift Driver
E.3	Responsibilities of Pedestrians in the Vicinity of a Forklift
E.4	Safe Forklift Operation
F	INSPECTION OF UNLOADING & STAGING AREAS AND TANK FARMS
F.1	Inspection Procedures and Frequency
F.2	Detection and Handling of Bulged Drum Heads
F.3	Accumulated Rainwater Removal
F.4	Spill Response Procedures
G	IGNITABILITY TESTING
G.1	Definition of Ignitability
G.2	Methods to Test for Ignitability
G.3	Precautions to be Taken When Handling Ignitable Wastes
H	pH AND CORROSIVITY
H.1	Definition of pH and Corrosivity
H.2	Methods to Test for Corrosivity
H.3	Recognition of Corrosivity in Hazardous Waste Management Areas
I	HOT WORK POLICY/PROCEDURES
I.1	Hot Work Authorization/Permit Procedures
I.2	Special Hazards and Precautions
I.3	Personal Protective Clothing and Equipment
I.4	Responsibilities of the Supervisor
I.5	Responsibilities of the Worker
I.6	Procedures for Proper and Safe Welding, Flamecutting, and Grinding

TABLE H-1.1

TRAINING COURSES

TRAINING COURSE CODE	SUBJECT MATTER OF TRAINING COURSE
A	INTRODUCTION TO HAZARDOUS WASTE MANAGEMENT
A.1	Introduction to FFPI
A.2	Employee Right-to-Know
A.3	Overview of Federal/RCRA, State, and Local Regulations
A.4	Health and Environmental Hazard Awareness
A.5	Site Control and Practices
A.6	Hazardous Wastes to be Handled at FFPI and Associated Hazards
B	HAZARDOUS WASTE SHIPMENTS TO FFPI
B.1	Hazardous Waste Receiving Management Personnel
B.2	Hazardous Waste Receiving Procedures
B.3	Features of the Hazardous Waste Manifest
B.4	Procedures for Inspecting Hazardous Wastes Received at FFPI
B.5	Steps to Check Each Hazardous Waste Shipment Against Its Manifest
B.6	Steps to Check Labels on Each Shipment
B.7	Proper Hazardous Waste Unloading Procedures
C	TANK TRUCK AND RAILCAR LOADING AND UNLOADING PROCEDURES
C.1	Features of the Tank Truck and Railcar
C.2	Tank Truck and Railcar Sampling Procedures
C.3	Proper Hose Connection/Hook-Up
C.4	Procedures to Transfer Tank Truck and Railcar Contents
C.5	Proper Unhooking and Buttoning Up Procedures
D	CONTAINER HANDLING PROCEDURES
D.1	Container Unloading Procedures
D.2	Proper Container Staging and Storage
D.3	Container Sampling Procedures
D.4	Container Emptying Methods
D.5	Methods for Setting Aside Empty Containers
D.6	Proper Cleanup Procedures

FLORIDA FIRST PROCESSING, INC.

APPENDIX H-1

EMPLOYEE TRAINING COURSES

Date: 5/31/89
Revision: 0

Contaminated wash and rinse solutions and contaminated articles will be contained and properly disposed of as hazardous wastes.

H.2.4.3 Job-Specific Training

New employees at the facility will be involved in on-job training for at least 1 month following orientation, health and safety training, and Contingency Plan training to acquire specific skills needed for their job functions and to ensure that work is performed in a safe and environmentally sound manner. During on-job training, a supervisor will supervise, observe, counsel, and teach the new or less experienced employee the basics of the particular tasks assigned to that employee. This type of training will build on the required introductory formal instruction by using, in specific assignments, the information obtained in the classroom. Once the supervisor is satisfied that the new employee has mastered the training requirements of his position, the trainee will be authorized to work under reduced supervision (the normal job status for all non-supervisory personnel).

Reference books such as the NIOSH Pocket Guide to Chemical Hazards and waste records and data sheets such as Pre-Acceptance Waste Characterization Sheets, Waste Receipt Laboratory Analysis Worksheets, Treatability Laboratory Analysis Worksheets (which are found in the Waste Analysis Plan of this Part B Application) will be made available to all employees. All waste management personnel will be instructed in reading and understanding these reference books, waste records, and data sheets which contain chemical descriptions of the hazardous wastes handled at the facility, information on recognition of hazards associated with the wastes, and response to emergencies involving such wastes. Understanding and recognizing dangerous situations will be necessary to enable employees to manage these wastes safely and to properly implement the Contingency Plan when necessary.

H.2.5 ANNUAL REFRESHER TRAINING

Every year, all employees will be required to undergo classroom and on-job refresher training to keep them up-to-date on health and safety procedures, Contingency Plan procedures and implementation, and safe and environmentally sound hazardous waste management techniques taught in the introductory and job-specific training so that these skills do not deteriorate from disuse or carelessness, in accordance with 40 CFR 264.16(c) and F.A.C. 17-30.180. The annual refresher training will review all key points given in the introductory classroom instruction and on-job training as discussed in Section H.2.4, and will highlight modifications, new techniques and procedures, and the experience gained. The annual refresher training will include:

- Safety meetings;
- Fire fighting practices;
- CPR recertification for designated employees as required by the American Red Cross;
- First aid renewal every 3 years for designated employees as required by the American Red Cross;
- Training in new techniques and procedures;
- Health and Safety training review;
- Contingency Plan training review; and
- Job-specific training review.

At the end of the refresher training, all employees will be evaluated by instructors and supervisors. Training Completion Forms, examination results, and job experience records will be maintained up-to-date for all current employees, and for at least three years after an employee leaves the facility, or the facility closes, whichever is earlier, in accordance with 40 CFR 264.16(d)(4),(e), and F.A.C. 17-30-180.

FLORIDA FIRST PROCESSING, INC.

SECTION H

TRAINING PLAN

Date: 5/31/89
Revision: 0

APPENDIX G-1

FLORIDA FIRST PROCESSING, INC.
CONTINGENCY PLAN DISTRIBUTION LIST

1. Director
National Response Center
U.S. Coast Guard
G-TNR
400 7th Street, S.W.
Washington, DC 20950
Telephone: (800) 424-8802 (24-hour toll-free number)

2. Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365
Telephone: (404) 881-4727

3. Director
Florida Department of Environmental Regulation
2600 Blairstone Road
Twin Towers Office Building
Tallahassee, FL 32399-2400
Telephone: (904) 488-1330 (24-hour emergency response number)
(904) 488-4805 (business hours)

4. Sheriff
Polk County Sheriff's Department
455 N. Broadway Ave.
Bartow, FL 33830
Telephone: (813) 533-0344

5. Fire Marshall
Polk County Fire District 2 Station
P.O. Box 1336
Bartow Air Base
Bartow, FL 33830
Telephone: (813) 534-1557

6. Director
Polk County Civil Defense Office
P.O. Box 1336
Bartow Air Base
Bartow, FL 33830
Telephone: (813) 533-6060

FLORIDA FIRST PROCESSING, INC.
CONTINGENCY PLAN DISTRIBUTION LIST
(continued)

7. Director
   Polk County Emergency Medical Service
   P.O. Box 1336
   Bartow Air Base
   Bartow, FL 33830
   Telephone: (813) 533-7161

8. Administrator
   Polk General Hospital
   2020 E. Georgia St.
   Bartow, FL 33830
   Telephone: (813) 533-1111

9. Director
   Polk County Public Health Unit
   Polk County Commission Building
   255 N. Broadway Avenue
   Bartow, FL 33830
   Telephone: (813) 533-7188

10. Army Corp of Engineers
    P.O. Box 19247
    Tampa, FL 33686-9247
    Telephone: (813) 840-0824

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FLORIDA FIRST PROCESSING, INC.

APPENDIX D-5

DRAWINGS

Date: 9/29/89
Revision: 1

DRAWING INDEX

(Arranged by Unit/Area According to Process Flow)

Date: 9/29/89
Revision: 1

DRAWING INDEX

ITEM	DRAWING NUMBER
Incinerator System	F-001, F-013, F-014, F-070, F-076, M-018 to M-021, P-001, P-008, P-009, P-010, S-010, S-011
Organic Waste Receiving, Sampling Analysis, Blending & Charging	F-002
Organic Treatment Containerized Waste Receiving, Handling, & Staging	F-011, F-050, M-012, M-015, M-016, P-005, P-006, S-005, S-007
Organic Treatment Bulk Pumpable Waste Unloading	F-011, F-049, M-011, P-002, S-002
Organic Treatment Bulk Solids Unloading & Handling	F-068, M-017, P-007, S-008, S-009
Organic Treatment RR Car Unloading	M-025, S-016
Organic Treatment RR Tank Car Unloading	M-013, P-003, S-012
Organic Treatment Pumpable Waste Storage	F-012, F-051, F-052, M-014, P-004
Organic Treatment Feed System	F-064, F-065, F-066, F-067, F-069
Organic Treatment Dried Solids System	F-077, M-026, P-012, S-011
Organic Treatment Ash Loadout	S-015

DRAWING INDEX (continued)

ITEM	DRAWING NUMBER
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Organic Treatment Emission Control System	F-016, F-080
Trial Burn #3 Sampling & Monitoring Location	F-017
Trial Burn Heat & Material Balance	F-018
Organic Treatment Receiving/Holding Tank (T-10)	F-012, F-053, M-014, S-001, S-003
Organic Treatment Receiving/Holding Tank (T-11)	F-012, F-054, M-014, S-001, S-003
Organic Treatment Receiving/Holding Tank (T-12)	F-012, F-055, M-014, S-001, S-003
Organic Treatment Receiving/Holding Tank (T-13)	F-012, F-056, M-014, S-001, S-003
Organic Treatment Receiving/Holding Tank (T-14)	F-012, F-057, M-014, S-001, S-003
Organic Treatment Receiving/Holding Tank (T-15)	F-012, F-058, M-014, S-001, S-003
Organic Treatment Sludge Holding Tank (T-16)	F-012, F-059, M-014, S-001, S-003
Organic Treatment Sludge Feed Tank (T-17)	F-012, F-060, M-014, S-001, S-003

DRAWING INDEX (continued)

ITEM	DRAWING NUMBER
Organic Treatment Low-Btu Liquid Feed (T-18)	F-012, F-061, M-014, S-001, S-003
Organic Treatment High-Btu Liquid Feed Tank #1 (T-19)	F-012, F-062, M-014, S-001, S-003
Organic Treatment High-Btu Liquid Feed Tank #2 (T-20)	F-012, F-063, M-014, S-001, S-003
Inorganic Treatment System	F-004, S-035, S-037
Inorganic Waste Receiving, Sampling Analysis & Treatment	F-003
Inorganic Treatment Containerized Waste Receiving, Handling, & Staging	F-030, F-098, M-012, M-032, P-015, S-036
Inorganic Treatment Bulk Pumpable Waste Handling	F-031, F-102, M-030, S-030, S-031
Inorganic Treatment Non-Pumpable Waste Handling	F-030, M-031, P-014, S-032, S-033
Inorganic Treatment Reagent Unloading & Storage	F-034, M-033, P-016, P-018, S-038
Inorganic Treatment Pumpable Waste Storage	F-032, F-033, M-030, P-013
Inorganic Treatment Multi-Purpose Reactors	F-035, F-121, F-124, F-125, M-035, P-018

DRAWING INDEX (continued)

ITEM	DRAWING NUMBER
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Inorganic Treatment Sludge Dewatering	F-037, F-127, M-034, P-017, S-034
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Inorganic Treatment Chromate Waste Manifold and Feed Pumps	F-103
Inorganic Treatment Acidic Waste Manifold and Feed Pumps	F-104
Inorganic Treatment Alkaline Containerized Waste Handling (T-07)	F-099
Inorganic Treatment Acidic Containerized Waste Handling (T-08)	F-101
Inorganic Treatment Alkaline Containerized Waste Handling (T-21)	F-098
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DRAWING INDEX (continued)

ITEM	DRAWING NUMBER
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Inorganic Treatment Chromate Waste Storage Tank (T-26)	F-032, F-106, M-030
Inorganic Treatment Chromate Waste Storage Tank (T-27)	F-032, F-107, M-030
Inorganic Treatment Chromate Waste Storage Tank (T-28)	F-032, F-108, M-030
Inorganic Treatment Chromate Waste Storage Tank (T-29)	F-032, F-109, M-030
Inorganic Treatment Chromate Waste Storage Tank (T-30)	F-032, F-110, M-030
Inorganic Treatment Acid Waste Storage Tank (T-31)	F-032, F-111, M-030
Inorganic Treatment Acid Waste Storage Tank (T-32)	F-032, F-112, M-030
Inorganic Treatment Acid Waste Storage Tank (T-33)	F-032, F-113, M-030

DRAWING INDEX (continued)

ITEM	DRAWING NUMBER
Inorganic Treatment Acid Waste Storage Tank (T-34)	F-032, F-114, M-030
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Inorganic Treatment Alkaline Waste Storage Tank (T-36)	F-033, F-116, M-030
Inorganic Treatment Cyanide Waste Storage Tank (T-37)	F-033, F-117, M-030
Inorganic Treatment Cyanide Waste Storage Tank (T-38)	F-033, F-118, M-030
Stabilization	F-039, F-130, F-131, F-132, M-024, P-011, S-017, S-018
Truck & Lugger Box Staging	M-010, S-004
Residue Storage	M-022, M-023, S-013
Pipe Rack Arrangements	P-001
P & ID Symbols & Nomenclature	F-048

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-001	Incinerator Block Flow Diagram	E	9/08/89	IFP	PROC	
00-F-002	Organic Waste Receiving, Sampling, Analysis, Blending Block Flow Dia	D	04/21/89	IFP	PROC	
00-F-003	Inorganic Waste Receiving, Sampling, Analysis & Treat Block Flow Dia	D	04/21/89	IFP	PROC	
00-F-004	Inorganic Treatment System Block Flow Diagram	E	05/17/89	IFP	PROC	
00-F-010	Process Flowsheet Symbols and Nomenclature	D	04/21/89	IFP	PROC	
00-F-011	Organic Treat Bulk Pump.Unloading & Contain. Waste Handl. Flowsheet	F	05/04/89	IFP	PROC	
00-F-012	Organic Treatment Pumpable Waste Storage Flowsheet	E	05/04/89	IFP	PROC	
00-F-013	Organic Treatment Burner System Flowsheet	G	9/08/89	IFP	PROC	
00-F-014	Organic Treatment Thermal Processing Flowsheet	F	9/08/89	IFP	PROC	
00-F-015	Organic Treatment Air Pollution Control Flowsheet	H	9/20/89	IFP	PROC	
00-F-016	Organic Treatment Emission Control System Flowsheet	G	9/22/89	IFP	PROC	
00-F-017	Trial Burn Sampling & Monitoring Location Flowsheet	F	9/20/89	IFP	PROC	
00-F-018	Heat & Material Balance Trial Burn Test 3	D	9/20/89	IFP	PROC	
00-F-019	Water Balance	B	05/04/89	IFA	PROC	
00-F-030	Inorganic Treatment, Containerized Waste Handling Flowsheet	F	05/04/89	IFP	PROC	

DRAWING STATUS NOTES

PLN:	PLANNING DRAWING	CHK:	CHECKED
DRF:	IN DEVELOPMENT	IFP:	ISSUED FOR PERMIT
IFA:	ISSUED FOR APPROVAL	REV:	REVISION IN PROGRESS
WCA:	AWAITING APPROVAL	AFP:	APPROVE FOR PURCHASE
AFD:	APPROVE FOR DESIGN	AFC:	APPROVE FOR CONSTRUCTION
CKG:	CHECK IN PROGRESS		

CLIENT: MIDCON DEV

PROJECT NO: 8813

PROJECT: FLORIDA FIRST

ENG. PHASE:

IWES DRAWING CONTROL LOG

ISSUED BY: D. CRETS

DATE ISSUED: 9/27/89

DATE UPDATE DUE: 10/03/89

NEXT ISSUE DATE: 10/04/89

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-031	Inorganic Treatment Bulk Pumpable Waste Handling Flowsheet	F	05/17/89	IFP	PROC	
00-F-032	Inorganic Treatment Pumpable Waste Storage Sht 1 of 2	F	05/17/89	IFP	PROC	
00-F-033	Inorganic Treatment Pumpable Waste Storage Sht 2 of 2	F	05/17/89	IFP	PROC	
00-F-034	Inorganic Treatment Reactants Storage Flowsheet	E	05/04/89	IFP	PROC	
00-F-035	Inorganic Treatment Multi-Purpose Reactors Flowsheet	F	05/04/89	IFP	PROC	
00-F-036	Inorganic Treatment, Cyanide Reactor Flowsheet	E	05/04/89	IFP	PROC	
00-F-037	Inorganic Treatment Sludge Dewatering Flowsheet	F	05/04/89	IFP	PROC	
00-F-038	Inorganic Treatment Emission Control System Flowsheet	D	05/04/89	IFP	PROC	
00-F-039	Stabilization Flowsheet	D	05/04/89	IFP	PROC	
00-F-048	P&ID Symbols and Nomenclature	E	9/08/89	IFP	PROC	
00-F-049	P&ID Organic Treatment Bulk Pumpables Unloading	G	9/08/89	IFP	PROC	
00-F-050	P&ID Organic Treatment Containerized Waste Handling Flowsheet	G	9/08/89	IFP	PROC	
00-F-051	P&ID Organic Treatment Pumpable Waste Storage Feed Headers	E	9/08/89	IFP	PROC	
00-F-052	P&ID Organic Treatment Pumpable Waste Storage Emptying Headers	F	9/08/89	IFP	PROC	
00-F-053	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 1 of 6	F	9/08/89	IFP	PROC	

DRAWING STATUS NOTES

PLN:	PLANNING DRAWING	CHK:	CHECKED
DRF:	IN DEVELOPMENT	IFP:	ISSUED FOR PERMIT
IFA:	ISSUED FOR APPROVAL	REV:	REVISION IN PROGRESS
WCA:	AWAITING APPROVAL	AFP:	APPROVE FOR PURCHASE
AFD:	APPROVE FOR DESIGN	AFC:	APPROVE FOR CONSTRUCTION
CKG:	CHECK IN PROGRESS		

CLIENT: MIDCON DEV

PROJECT NO: 8813

PROJECT: FLORIDA FIRST

ENG. PHASE:

IWES DRAWING CONTROL LOG

ISSUED BY: D. CRETS
DATE ISSUED: 9/27/89
DATE UPDATE DUE: 10/03/89
NEXT ISSUE DATE: 10/04/89

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-054	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 2 of 6	E	9/08/89	IFP	PROC	
00-F-055	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 3 of 6	E	9/08/89	IFP	PROC	
00-F-056	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 4 of 6	E	9/08/89	IFP	PROC	
00-F-057	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 5 of 6	E	9/08/89	IFP	PROC	
00-F-058	P&ID Organic Treatment Organic Receiving/Holding Tank Sht. 6 of 6	E	9/08/89	IFP	PROC	
00-F-059	P&ID Organic Treatment Sludge Holding Tank	F	9/08/89	IFP	PROC	
00-F-060	P&ID Organic Treatment Sludge Feed Tank	E	9/08/89	IFP	PROC	
00-F-061	P&ID Organic Treatment Low-btu Liquid Feed Tank	F	9/08/89	IFP	PROC	
00-F-062	P&ID Organic Treatment High-Btu Liquid Feed Tank Sheet 1 of 2	G	9/08/89	IFP	PROC	
00-F-063	P&ID Organic Treatment High-Btu Liquid Feed Tank Sheet 2 of 2	F	9/08/89	IFP	PROC	
00-F-064	P&ID Organic Treatment Primary Combustion Feed System Sheet 1 of 2	F	9/08/89	IFP	PROC	
00-F-065	P&ID Organic Treatment Primary Combustion Feed System Sheet 2 of 2	E	9/08/89	IFP	PROC	
00-F-066	P&ID Organic Treatment SCC Feed System Sheet 1 of 2	E	9/08/89	IFP	PROC	
00-F-067	P&ID Organic Treatment SCC Feed System Sheet 2 of 2	F	9/08/89	IFP	PROC	
00-F-068	P&ID Organic Treatment Bulk Solids Unloading/Handling	F	9/08/89	IFP	PROC	

DRAWING STATUS NOTES

PLN: PLANNING DRAWING — CHK: CHECKED
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CKG: CHECK IN PROGRESS

CLIENT: MIDCON DEV

PROJECT NO: 8813

PROJECT: FLORIDA FIRST

ENG. PHASE:

IWES DRAWING CONTROL LOG

ISSUED BY: D. CRETS
DATE ISSUED: 9/27/89
DATE UPDATE DUE: 10/03/89
NEXT ISSUE DATE: 10/04/89

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-069	P&ID Organic Treatment Solids Feed System	F	9/08/89	IFP	PROC	
00-F-070	P&ID Organic Treatment Primary & Secondary Combustion Chamber	F	9/08/89	IFP	PROC	
00-F-074	P&ID Organic Treatment Preheater & SDA	F	9/08/89	IFP	PROC	
00-F-075	P&ID Organic Treatment Fabric Filter	E	9/08/89	IFP	PROC	
00-F-076	P&ID Organic Treatment Incinerator I.D. Fan & Stack	E	9/08/89	IFP	PROC	
00-F-077	P&ID Organic Treatment Dried Solids System	D	9/08/89	IFP	PROC	
00-F-080	P&ID Organic Treatment Emission Control System	G	9/22/89	IFP	PROC	
00-F-090	P&ID Lime Slaker System				PROC	
00-F-091	P&ID Lime Slaker System				PROC	
00-F-098	P&ID Inorgan. Treat. Alkaline/Cyanide Container Waste Handling Sht. 1 of 2	E	9/08/89	IFP	PROC	
00-F-099	P&ID Inorgan. Treat. Alkaline/Cyanide Container Waste Handling Sht. 2 of 2	E	9/08/89	IFP	PROC	
00-F-100	P&ID Inorgan. Treat. Acidic/Chromate Container Waste Handling Sht. 1 OF 2	E	9/08/89	IFP	PROC	
00-F-101	P&ID Inorgan. Treat. Acidic/Chromate Container Waste Handling Sht. 2 OF 2	F	9/08/89	IFP	PROC	
00-F-102	P&ID Inorganic Treatment Bulk Pumpables Handling	H	9/08/89	IFP	PROC	
00-F-103	P&ID Inorganic Treatment Chromate Waste Manifold and Feed Pumps	F	9/08/89	IFP	PROC	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-104	P&ID Inorganic Treatment Acidic Waste Manifold & Feed Pumps	F	9/08/89	IFP	PROC	
00-F-105	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 1 of 6	G	9/08/89	IFP	PROC	
00-F-106	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 2 of 6	F	9/08/89	IFP	PROC	
00-F-107	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 3 of 6	G	9/08/89	IFP	PROC	
00-F-108	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 4 of 6	F	9/08/89	IFP	PROC	
00-F-109	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 5 of 6	F	9/08/89	IFP	PROC	
00-F-110	P&ID Inorganic Treatment Chromate Waste Storage Tanks Sht. 6 of 6	F	9/08/89	IFP	PROC	
00-F-111	P&ID Inorganic Treatment Acid Waste Storage Tanks Sht 1 of 4	G	9/08/89	IFP	PROC	
00-F-112	P&ID Inorganic Treatment Acid Waste Storage Tanks Sht 2 of 4	F	9/08/89	IFP	PROC	
00-F-113	P&ID Inorganic Treatment Acid Waste Storage Tanks Sht 3 of 4	F	9/08/89	IFP	PROC	
00-F-114	P&ID Inorganic Treatment Acid Waste Storage Tanks Sht 4 of 4	F	9/08/89	IFP	PROC	
00-F-115	P&ID Inorganic Treatment Alkaline Waste Storage Tanks Sht. 1 of 2	G	9/08/89	IFP	PROC	
00-F-116	P&ID Inorganic Treatment Alkaline Waste Storage Tanks Sht. 2 of 2	C	9/08/89	IFP	PROC	
00-F-117	P&ID Inorganic Treatment Cyanide Waste Storage Tanks Sht. 1 of 2	H	9/08/89	IFP	PROC	
00-F-118	P&ID Inorganic Treatment Cyanide Waste Storage Tanks Sht. 2 of 2	G	9/08/89	IFP	PROC	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-F-119	P&ID Inorganic Treatment Reactants Sheet 1 of 2				PROC	
00-F-120	P&ID Inorganic Treatment Reactants Sheet 2 of 2				PROC	
00-F-121	P&ID Inorganic Treatment Distribution to Multi-Purpose & Cyanide Reactors	G	9/08/89	IFP	PROC	
00-F-122					PROC	
00-F-123	P&ID Inorganic Treatment Multi-Purpose Reactors Sheet 1 of 3	H	9/08/89	IFP	PROC	
00-F-124	P&ID Inorganic Treatment Multi-Purpose Reactors Sheet 2 of 3	G	9/08/89	IFP	PROC	
00-F-125	P&ID Inorganic Treatment Multi-Purpose Reactors Sheet 3 of 3	G	9/08/89	IFP	PROC	
00-F-126	P&ID Inorganic Treatment Cyanide Reactor	H	9/08/89	IFP	PROC	
00-F-127	P&ID Inorganic Treatment Sludge Dewatering	F	9/08/89	IFP	PROC	
00-F-128	P&ID Inorganic Treatment Emmission Control System	F	9/08/89	IFP	PROC	
00-F-130	P&ID Stabilization Storage Silo	C	9/08/89	IFP	PROC	
00-F-131	P&ID Stabilization Feed System	D	9/08/89	IFP	PROC	
00-F-132	P&ID Stabilization Mixing System	D	9/08/89	IFP	PROC	

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NEXT ISSUE DATE: 10/04/89
SHEET: 6 OF 12

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-M-001	Site Plan	I	9/08/89	IFP	MECH	
00-M-002	Traffic Route Plan	E	9/08/89	IFP	MECH	
00-M-003	Emergency Equipment & Communication Plan	E	9/08/89	IFP	MECH	
00-M-004	Evacuation Plan	E	9/08/89	IFP	MECH	
00-M-005	Paving Plan	E	9/08/89	IFP	MECH	
00-M-006	Air Emission Point Sources & Emission Control Systems Plan	A	9/21/89	IFP	MECH	
00-M-010	G.A. Truck & Lugger Box Staging Plan Sections	D	9/08/89	IFP	MECH	
00-M-011	G.A. Organic Treatmrny Tank Truck Unloading Plans & Sections	D	9/08/89	IFP	MECH	
00-M-012	G.A. Organic Treatment Container Truck Unloading Plans & Sections	E	9/08/89	IFP	MECH	
00-M-013	G.A. Organic Treatment Railroad Tank Car Unloading	E	9/08/89	IFP	MECH	
00-M-014	G.A. Organic Treatment Pumpable Waste Storage Plans & Sections	F	9/22/89	IFP	MECH	
00-M-015	G.A. Organic Treatment Container Staging Plan	D	9/08/89	IFP	MECH	
00-M-016	G.A. Organic Treatment Container Staging Sections	D	9/08/89	IFP	MECH	
00-M-017	G.A. Organic Treatment Bulk Solids Unloading & Handling Plan & Sections	D	9/08/89	IFP	MECH	
00-M-018	G.A. Organic Treatment Kiln Feed Plans & Sections	D	9/08/89	IFP	MECH	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-M-019	G.A. Organic Treatment Kiln & Gas Cleaning Plan	E	9/08/89	IFP	MECH	
00-M-020	G.A. Organic Treatment Kiln & Gas Cleaning Elevation	D	9/08/89	IFP	MECH	
00-M-021	Arrangement-Organic Treatment Kiln Feed Hood	D	9/08/89	IFP	MECH	
00-M-022	G.A. Residue Storage Plan	C	9/08/89	IFP	MECH	
00-M-023	G.A. Residue Storage Sections	C	9/08/89	IFP	MECH	
00-M-024	G.A. Stabilization Plans & Sections	C	9/08/89	IFP	MECH	
00-M-025	G.A. Railroad Car Loading/Unloading Plan & Sections	C	9/08/89	IFP	MECH	
00-M-026	G.A. Organic Treatment Dried Solids System Plans & Sections	D	9/08/89	IFP	MECH	
00-M-030	G.A. Inorganic Treatment Pumpable Waste Unloading & Storage Plan/Sections	E	9/08/89	IFP	MECH	
00-M-031	G.A. Inorganic Treatment Non-Pumpable Waste Handling Plan & Sections	D	9/08/89	IFP	MECH	
00-M-032	G.A. Inorganic Treatment Container Unloading & Staging Plan & Sections	D	9/08/89	IFP	MECH	
00-M-033	G.A. Inorganic Treatment Reagent Unloading & Storage Plan & Sections	D	9/08/89	IFP	MECH	
00-M-034	G.A. Inorganic Treatment Sludge Dewatering Plans & Sections	D	9/08/89	IFP	MECH	
00-M-035	G.A. Inorganic Treatment Reactor Tanks Plan & Sections	D	9/08/89	IFP	MECH	

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SHEET: 8 OF 12

DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-P-001	Site Plan Pipe Rack Arrangements	A	9/08/89	IFP	MECH	
00-P-002	G.A.-Organic Treatment Tank Truck Unloading Plans & Sections w/Piping	A	9/08/89	IFP	MECH	
00-P-003	G.A.-Organic Treatment Railroad Tank Car Unloading with Piping	A	9/08/89	IFP	MECH	
00-P-004	G.A.-Organic Treatment Pumpable Waste Storage Plan & Section w/Piping	B	9/22/89	IFP	MECH	
00-P-005	G.A.-Organic Treatment Container Staging Plan with Piping	A	9/08/89	IFP	MECH	
00-P-006	G.A.-Organic Treatment Container Staging Sections with Piping	A	9/08/89	IFP	MECH	
00-P-007	G.A.-Organic Treat. Bulk Solids Unloading & Handling Plan with Piping	A	9/08/89	IFP	MECH	
00-P-008	G.A.-Organic Treatment Kiln Feed Plans & Sections with Piping	A	9/08/89	IFP	MECH	
00-P-009	G.A.- Organic Treatment Kiln & Gas Cleaning Plan with Piping	A	9/08/89	IFP	MECH	
00-P-010	G.A.-Organic Treatment Kiln & Gas Cleaning Elevation with Piping	A	9/08/89	IFP	MECH	
00-P-011	G.A.-Stabilization Plans and Sections with Piping	A	9/08/89	IFP	MECH	
00-P-012	G.A.-Organic Treatment Dried Solids System Plans & Sections w/Piping	A	9/08/89	IFP	MECH	
00-P-013	G.A.-Inorganic Treatment Pumpable Waste Unloading & Storage Plan w/Piping	A	9/08/89	IFP	MECH	
00-P-014	G.A.-Inorganic Treatment Non-Pumpable Waste Handling Plan w/Piping	A	9/08/89	IFP	MECH	
00-P-015	G.A.-Inorganic Treatment Container Unloading & Staging Plan w/Piping	A	9/08/89	IFP	MECH	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-P-016	G.A.-Inorganic Treatment Reagent Unloading & Storage Plan w/Piping	A	9/08/89	IFP	MECH	
00-P-017	G.A.-Inorganic Treatment Sludge Dewatering Plans & Sections w/Piping	A	9/08/89	IFP	MECH	
00-P-018	G.A.-Inorganic Treatment Reactor Tanks Plan & Sections with Piping	A	9/08/89	IFP	MECH	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-S-001	Organic Treatment Tanks-Foundation Plan Pumpable Waste Storage	D	9/20/89	IFP	C/S	
00-S-002	Organic Treatment Tank Truck Unloading Foundation Plan & Sections	C	4/28/89	IFP	C/S	
00-S-003	Organic Treatment Tanks-Foundation Sections/Details Pumpable Waste Storage	C	4/28/89	IFP	C/S	
00-S-004	Truck & Lugger Box Staging Foundation Plan and Sections	D	5/01/89	IFP	C/S	
00-S-005	Organic Treatment Container Staging Foundation Plan	C	4/28/89	IFP	C/S	
00-S-006	Organic Treatment Misc. Foundation Section & Details	C	4/28/89	IFP	C/S	
00-S-007	Organic Treatment Container Truck Unloading Foundation Plan & Sections	D	9/20/89	IFP	C/S	
00-S-008	Organic Treatment Bulk Solids Unloading & Handling Foundation Plans	D	5/01/89	IFP	C/S	
00-S-009	Organic Treatment Bulk Solids Unloading & Handling Found. Section/Details	D	5/01/89	IFP	C/S	
00-S-010	Organic Treatment Kiln Feed Foundation Plan	D	5/01/89	IFP	C/S	
00-S-011	Organic Treatment Dried Solids System Foundation Plan & Sections	E	9/20/89	IFP	C/S	
00-S-012	Organic TreatmentRailroad Tank Car Unloading Foundation Plan & Sections	E	9/20/89	IFP	C/S	
00-S-013	Residue Storage Foundation Plan	C	5/01/89	IFP	C/S	
00-S-014	Site Drainage Plan	D	9/20/89	IFP	C/S	
00-S-015	Organic Treatment Ash Loadout Foundation Plan	B	4/28/89	IFP	C/S	

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DRAWING NUMBER	DESCRIPTION	CUR REV	REV DATE	DRAWING STATUS	DSPL	REMARKS
00-S-016	RR Car Loading/Unloading Foundation Plan & Sections	C	5/01/89	IFP	C/S	
00-S-017	Stabilization Foundation Plans	B	5/05/89	IFP	C/S	
00-S-018	Stabilization Foundation Sections & Details	B	5/05/89	IFP	C/S	
00-S-030	Inorganic Treatment Pumpable Waste Unloading & Storage Foundation Plan	E	9/20/89	IFP	C/S	
00-S-031	Inorganic Treatment Pumpable Waste Unloading & Storage Found.Sect/Details	D	5/01/89	IFP	C/S	
00-S-032	Inorganic Treatment Non-Pumpable Waste Handling Foundation Plan	E	9/20/89	IFP	C/S	
00-S-033	Inorganic Treatment Non-Pumpable Waste Handling Found. Sections & Details	E	9/20/89	IFP	C/S	
00-S-034	Inorganic Treatment Sludge Dewatering & Reactor Tanks Foundation Plans	D	9/20/89	IFP	C/S	
00-S-035	Inorganic Treatment Foundation Sections & Details	D	9/21/89	IFP	C/S	
00-S-036	Inorganic Treatment Container Unloading & Staging Foundation Plan	E	9/21/89	IFP	C/S	
00-S-037	Inorganic Treatment Misc. Foundation Sections & Details	D	9/21/89	IFP	C/S	
00-S-038	Inorgnic Treatment Reagent Unloading & Storage Foundation Plan	E	9/20/89	IFP	C/S	
00-S-039						

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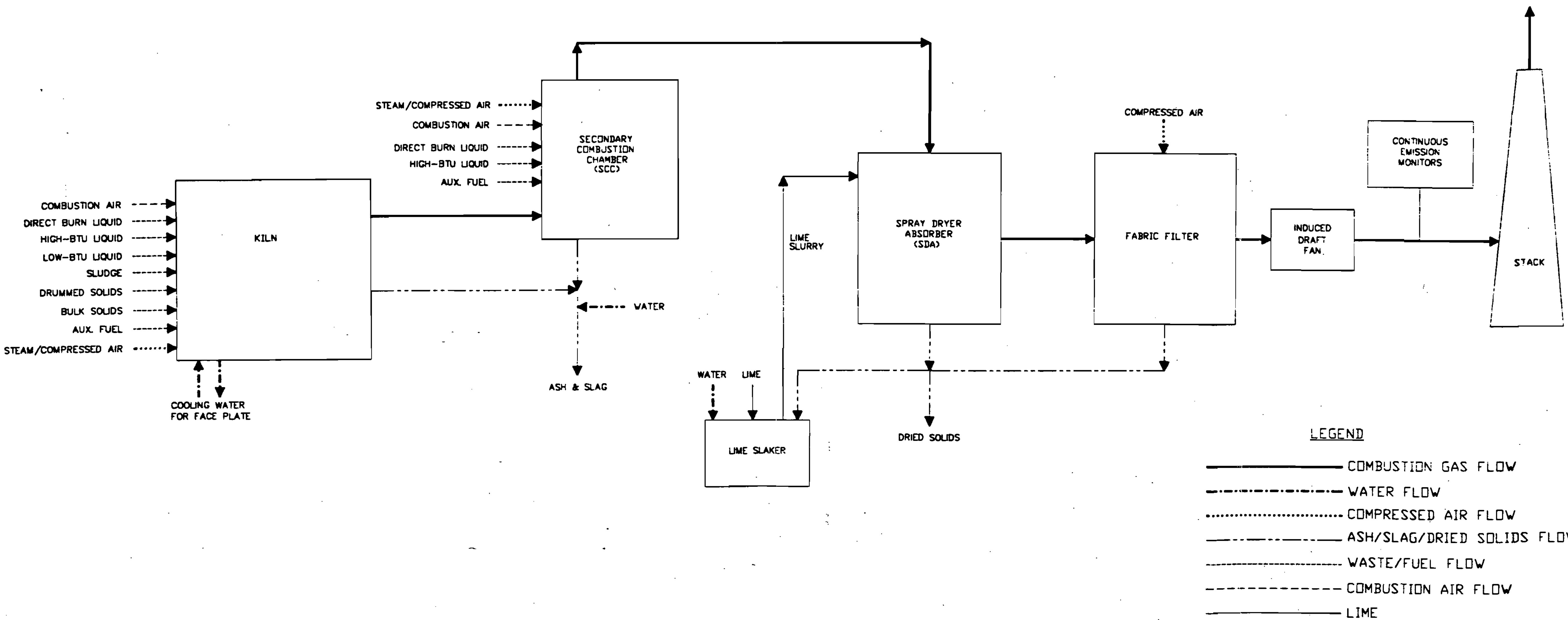


REV.	DATE	REVISION	BY	CHKD
E		GENERAL REVISION	L.C.D.	
D	4/21/89	ISSUED FOR PERMIT		L.D.C
C	01/12/89	ISSUED FOR CLIENT		L.D.C
B	12/12/88	ISSUED FOR CLIENT	RLM	L.D.C
A	11/10/88	ISSUED FOR INTERNAL REVIEW	RGF	L.D.C

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INCINERATOR BLOCK FLOW DIAGRAM

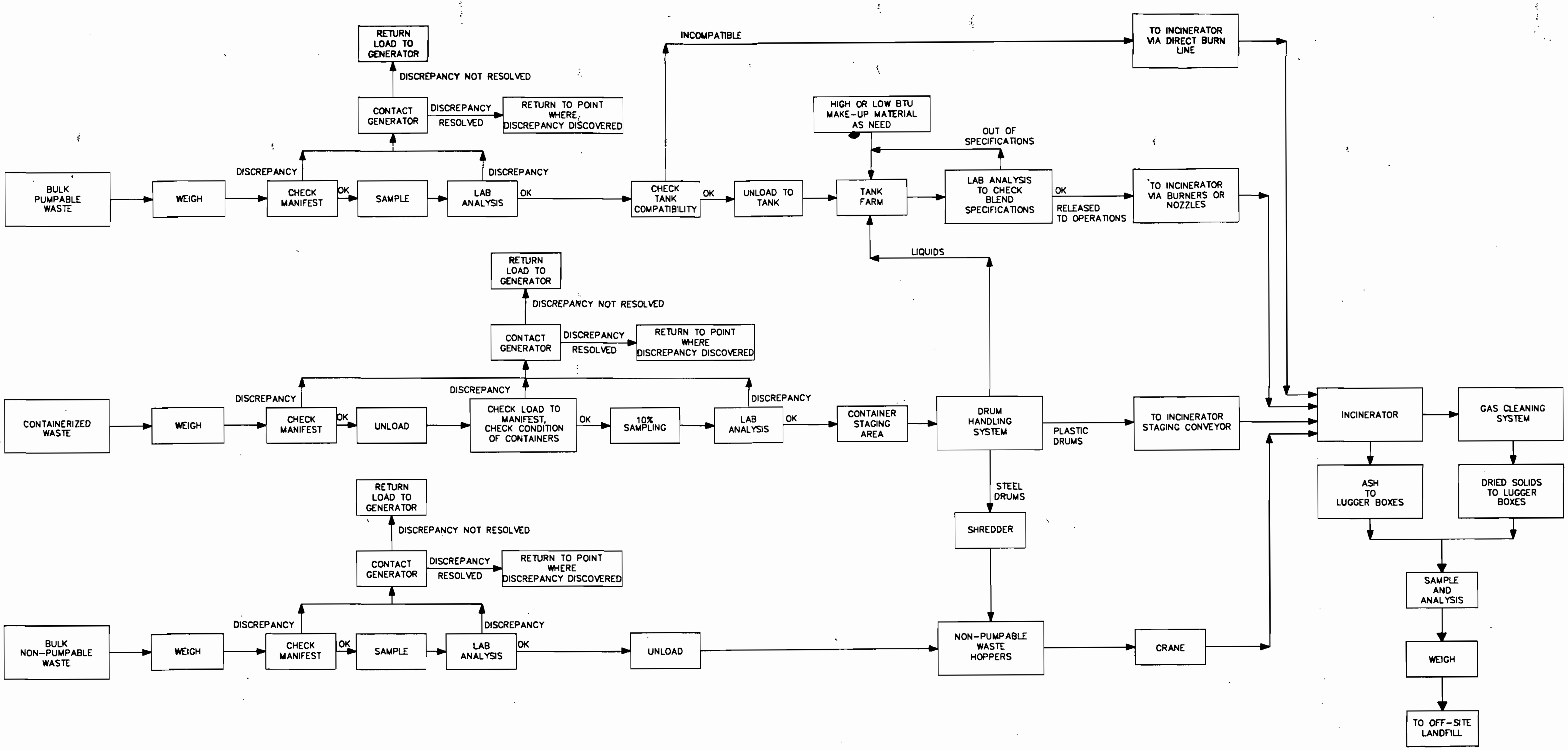
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RGF	11/10/88			8813-00-F-001	E
CHKD	DATE		DATE		

8813F001

NOTE:
SOLIDS GENERATED ON-SITE BY TANK STORAGE, WASTE PROCESSING AND OTHER SITE OPERATIONS (E.G. SPENT CARBON, CONTAIMINATED CLOTHING) WILL BE MANAGED BY INCINERATION OR OTHER PERMITTED MEANS OF DISPOSAL.



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

This document has been prepared and is approved by me for inclusion in environmental permit applications only. It is neither approved nor is it to be used for equipment or material procurement, construction or any other purpose.
Dick M. Miller 9/15/89

REV.	DATE	REVISION	BY	CHKD
D	04/21/89	ISSUED FOR PERMIT		
C	01/12/89	GENERAL REVISIONS		
B	12/12/88	ISSUED FOR CLIENT	RLM	
A	11/10/88	ISSUED FOR INTERNAL REVIEW	RGF	

04/21/89

International WasteEnergy Systems
ST. LOUIS, MO.

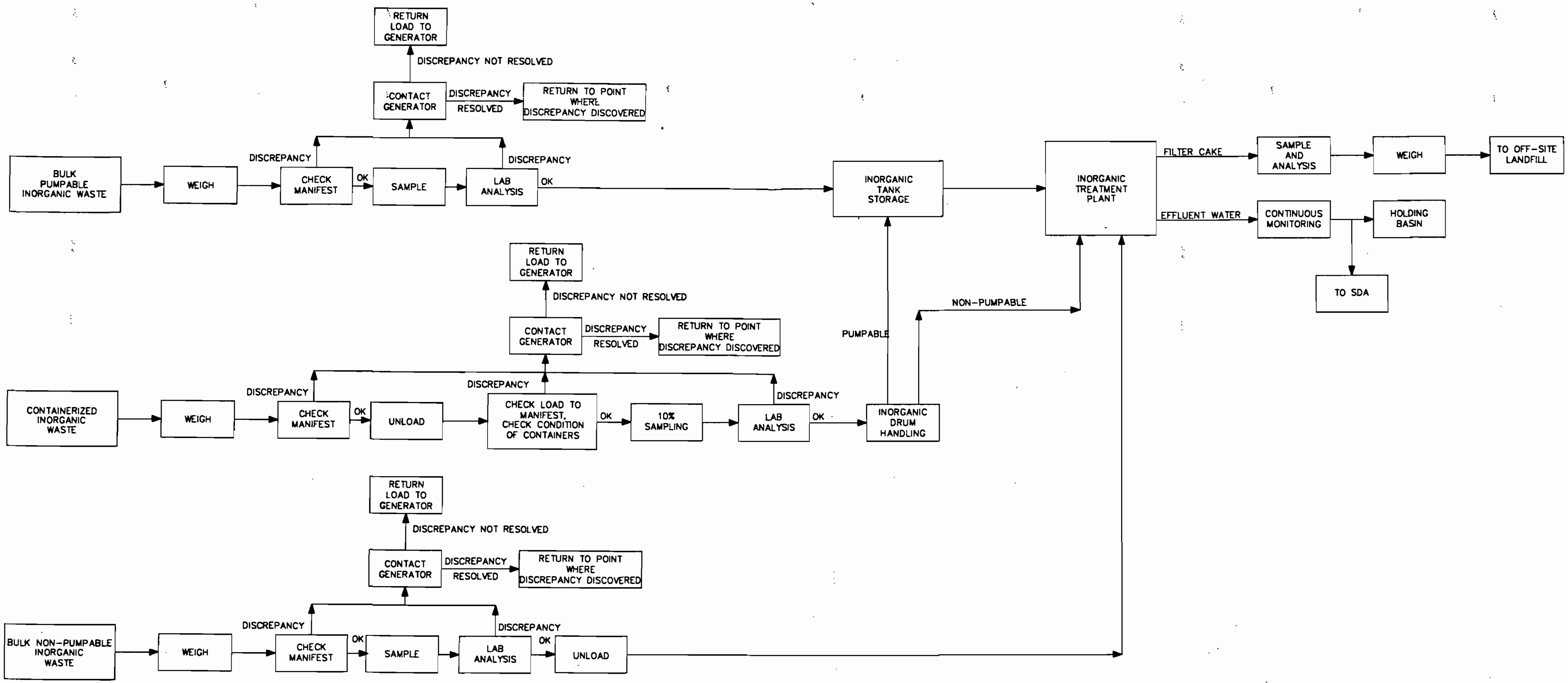
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC WASTE RECEIVING, SAMPLING, ANALYSIS, BLENDING & CHARGING BLOCK FLOW DIAGRAM

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RGF	11/10/88			8813-00-F-002	D
CHKD	DATE		DATE		

8813F002

NOTE:
SOLIDS GENERATED ON-SITE BY TANK STORAGE, WASTE PROCESSING AND OTHER SITE OPERATIONS (E.G. SPENT CARBON, CONTAMINATED CLOTHING) WILL BE MANAGED BY INCINERATION OR OTHER PERMITTED MEANS OF DISPOSAL.



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

International WasteEnergy Systems
ST. LOUIS, MO.

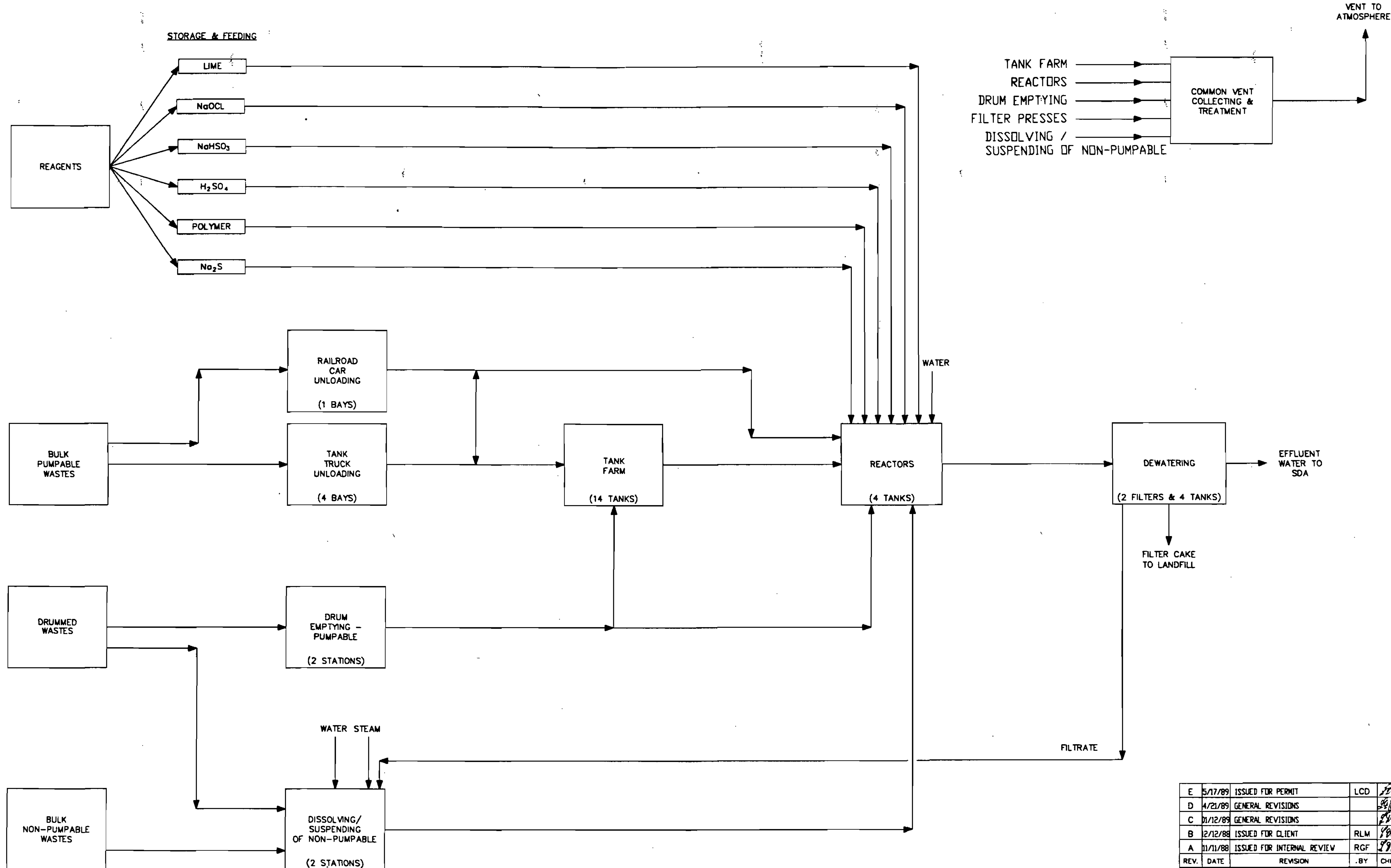
REV.	DATE	REVISION	BY	CHKD
D	4/21/89	ISSUED FOR PERMIT		
C	1/12/89	GENERAL REVISIONS		
B	2/12/88	ISSUED FOR CLIENT	RLM	
A	11/10/88	ISSUED FOR INTERNAL REVIEW	RGF	

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC WASTE RECEIVING, SAMPLING, ANALYSIS & TREATMENT BLOCK FLOW DIAGRAM

DRAWN RGF DATE 11/10/88 APPD DATE
CHKD DATE DATE
DRAWING NO. 8813-00-F-003 REV. D

04/21/89
8813F003



REV.	DATE	REVISION	BY	CHKD
E	5/17/89	ISSUED FOR PERMIT	LCD	
D	4/21/89	GENERAL REVISIONS		
C	01/12/89	GENERAL REVISIONS		
B	12/12/88	ISSUED FOR CLIENT	RLM	
A	11/11/88	ISSUED FOR INTERNAL REVIEW	RGF	

05/17/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
INORGANIC TREATMENT SYSTEM
BLOCK FLOW DIAGRAM

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RGF	11/11/88			8813-00-F-004	E
CHKD	DATE		DATE		

8813F004

GENERAL EQUIPMENT

- CENTRIFUGAL PUMP
- GEAR PUMP, ROTARY LOBE PUMP
- POSITIVE-DISPLACEMENT METERING PUMP
- HYDRAULIC PISTON PUMP
- POSITIVE-DISPLACEMENT, PROGRESSIVE-CAVITY PUMP
- AIR-OPERATED DIAPHRAGM PUMP
- GRINDER
- VACUUM PUMP
- PRESSURE VESSEL ON LEGS
- ATMOSPHERIC TANK ON LEGS
- ATMOSPHERIC TANK WITH CONICAL BOTTOM ON LEGS
- OPEN ATMOSPHERIC TANK WITH CONICAL BOTTOM ON LEGS
- ATMOSPHERIC TANK FLAT BOTTOM
- SEPARATOR TANK
- BULK SOLIDS SILO
- CENTRIFUGAL FAN
- COMPRESSOR

GENERAL EQUIPMENT

- SCREW CONVEYOR OR PUG MILL
- BELT CONVEYOR OR DRAG-LINK CONVEYOR
- ROLLER CONVEYOR
- GRIZZLY SCALPER
- HEAT EXCHANGER
- AIR COOLER
- AGITATOR
- DUST COLLECTOR
- PACKED COLUMN
- CARBON ADSORBER
- BURNER OR NOZZLE
- SHREDDER
- DUPLEX BASKET STRAINER
- FILTER
- CLAMSHELL CRANE

GENERAL PIPING

- PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW
- COMBUSTION GAS FLOW
- DIRECTION OF FLOW
- HOSE CONNECTION
- ATMOSPHERIC VENT
- QUICK CONNECT/DISCONNECT COUPLINGS/FLEXIBLE HOSE
- WELDED CAP/PIPING HEADER
- PIPE FLANGE
- SCREWED PLUG OR CAP
- DRAIN
- LINE BREAK OR RESUMPTION POINT
- LINE DRAIN WITH VALVE AND SCREWED CAP OR PLUG
- SPRAY NOZZLE
- FLAME ARRESTER

VALVES

- GATE VALVE (OR GENERAL, UNDEFINED VALVE TYPE), NORMALLY OPEN
- GATE OR UNDEFINED VALVE NORMALLY CLOSED
- CHECK VALVE
- NEEDLE VALVE
- GLOBE VALVE
- BALL VALVE
- PLUG VALVE
- BUTTERFLY VALVE OR DAMPER
- THREE-WAY VALVE
- ANGLE VALVE
- MOTORIZED ROTARY AIRLOCK
- MOTORIZED PENDULUM DOUBLE-FLAP VALVE
- 4 WAY VALVE (SOLENOID OPERATED)
- SLIDE GATE WITH OPERATOR
- LOUVERED DAMPER WITH CONTROL OPERATOR

INSTRUMENTS

- AUTOMATIC BLOCK VALVE (UNDEFINED VALVE TYPE WITH CONTROL OPERATOR), NORMALLY OPEN
- AUTOMATIC BLOCK VALVE, NORMALLY CLOSED
- CONTROL VALVE (UNDEFINED VALVE TYPE)
- SOLENOID VALVE

MISCELLANEOUS

- WATER IN SUMP
- ROTARY ATOMIZER

WASTE HANDLING EQUIPMENT

- TANKER TRUCK
- TRAILER TRUCK
- BULK NON PUMPABLES TRUCK
- DUMPSTER TRUCK
- RAILCAR
- POND PUMP
- FRONT END LOADER
- FORKLIFT
- BULLDOZER
- LUGGER BOX
- DUMPSTER
- CONTAINMENT AREA
- DRUM

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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
D	4/21/89	ISSUED FOR PERMIT		
C	01/12/89	GENERAL REVISIONS		
B	12/13/88	ISSUED FOR CLIENT	M.J.A.	
A	11/23/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	

04/21/89

SCALE:

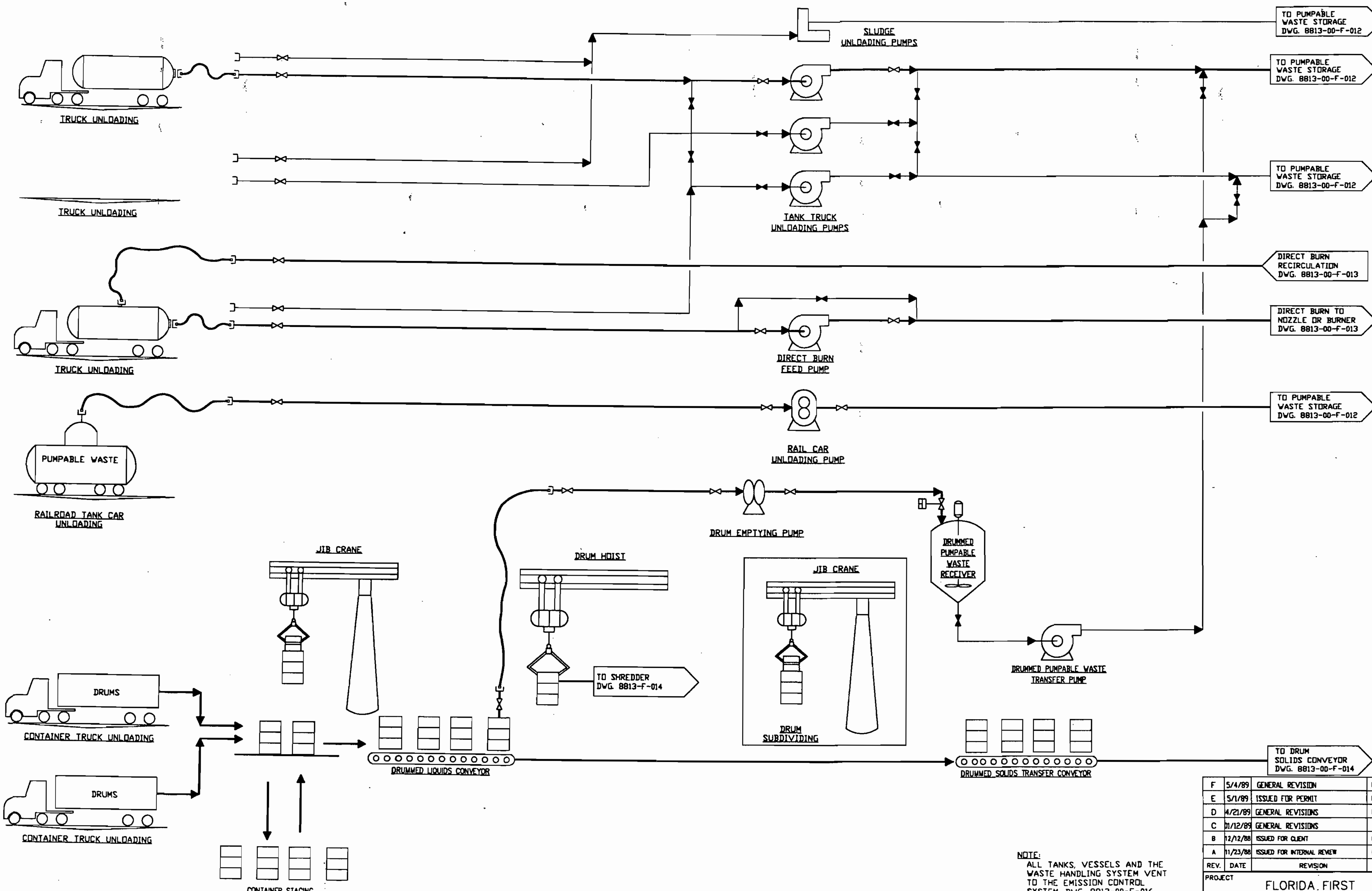
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: PROCESS FLOWSHEET SYMBOLS AND NOMENCLATURE

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/22/88			8813-00-F-010	D
CHKD	DATE		DATE		

8813F010



NOTE:
ALL TANKS, VESSELS AND THE WASTE HANDLING SYSTEM VENT TO THE EMISSION CONTROL SYSTEM, DWG. 8813-00-F-016

REV.	DATE	REVISION	BY	CHKD
F	5/4/89	GENERAL REVISION	L.C.D.	[signature]
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	[signature]
D	4/21/89	GENERAL REVISIONS	L.C.D.	[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	[signature]
A	11/23/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	[signature]

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC TREATMENT
BULK PUMPABLE UNLOADING & CONTAINERIZED WASTE HANDLING FLOWSHEET

DRAWN M.J.A.	DATE 11/22/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-011	F

8813F011

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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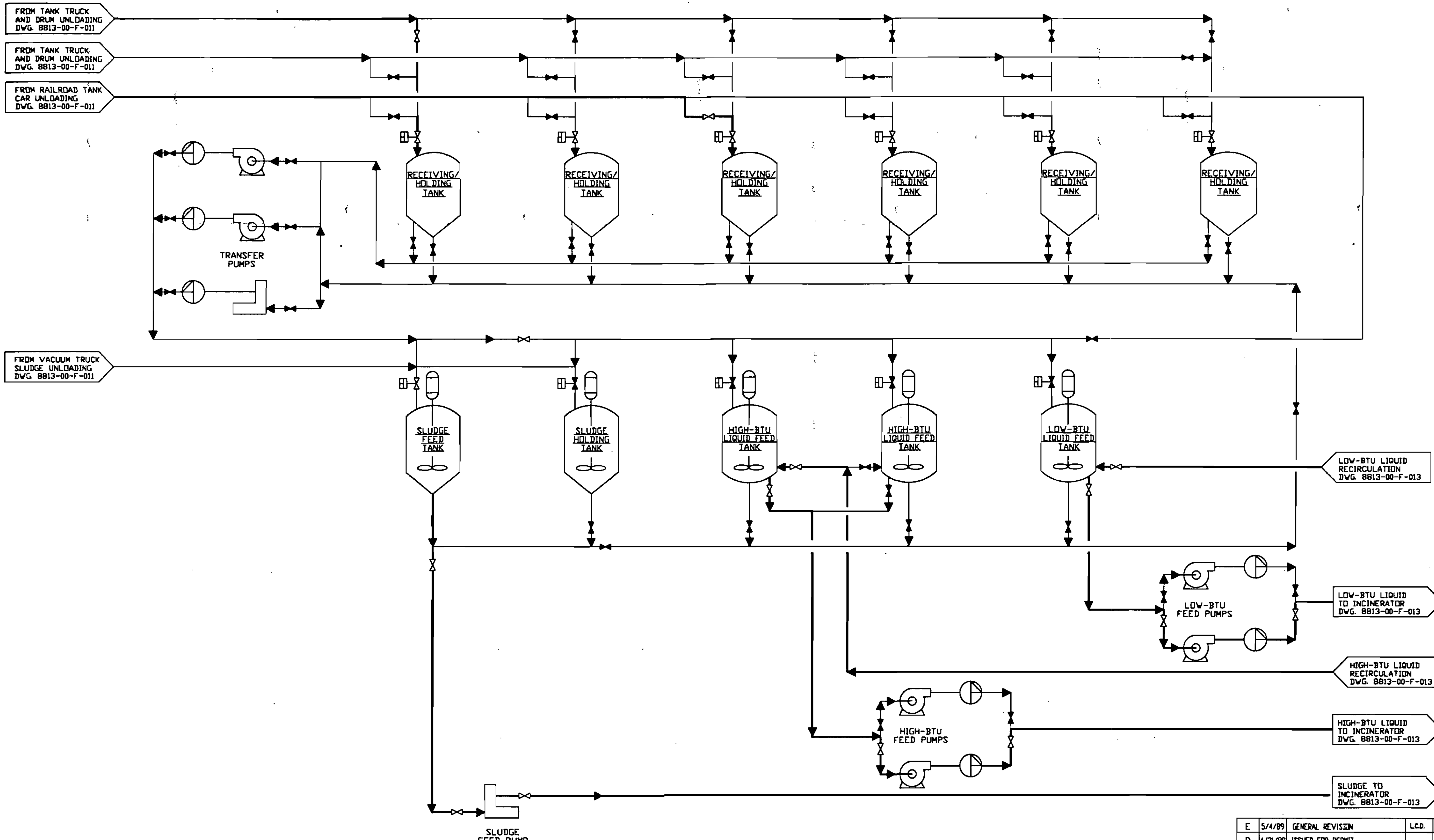
[signature] 5/25/89



NOTE:
ALL TANKS VENT TO THE EMISSION CONTROL SYSTEM DWG. 8813-00-F-016

REV.	DATE	REVISION	BY	CHKD
E	5/4/89	GENERAL REVISION	L.C.D.	[signature]
D	4/21/89	ISSUED FOR PERMIT		[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	[signature]
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	[signature]

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

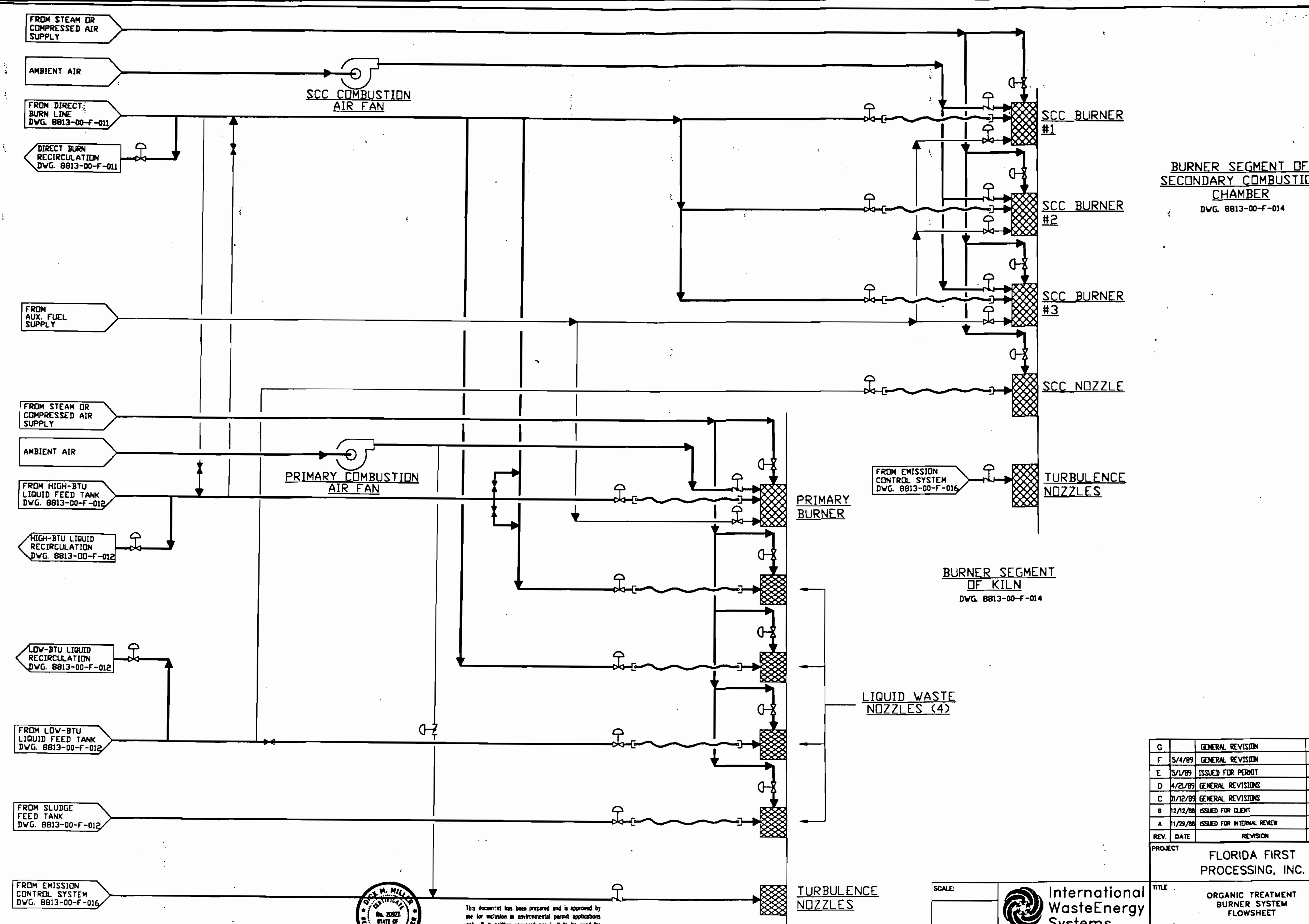
SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
ORGANIC TREATMENT PUMPABLE WASTE STORAGE FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/30/88				
CHKD	DATE		DATE	8813-00-F-012	E

8813F012



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D. M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
G		GENERAL REVISION	L.C.D.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISIONS		L.D.C.
C	01/12/89	GENERAL REVISIONS		L.D.C.
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	L.D.C.
A	11/29/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

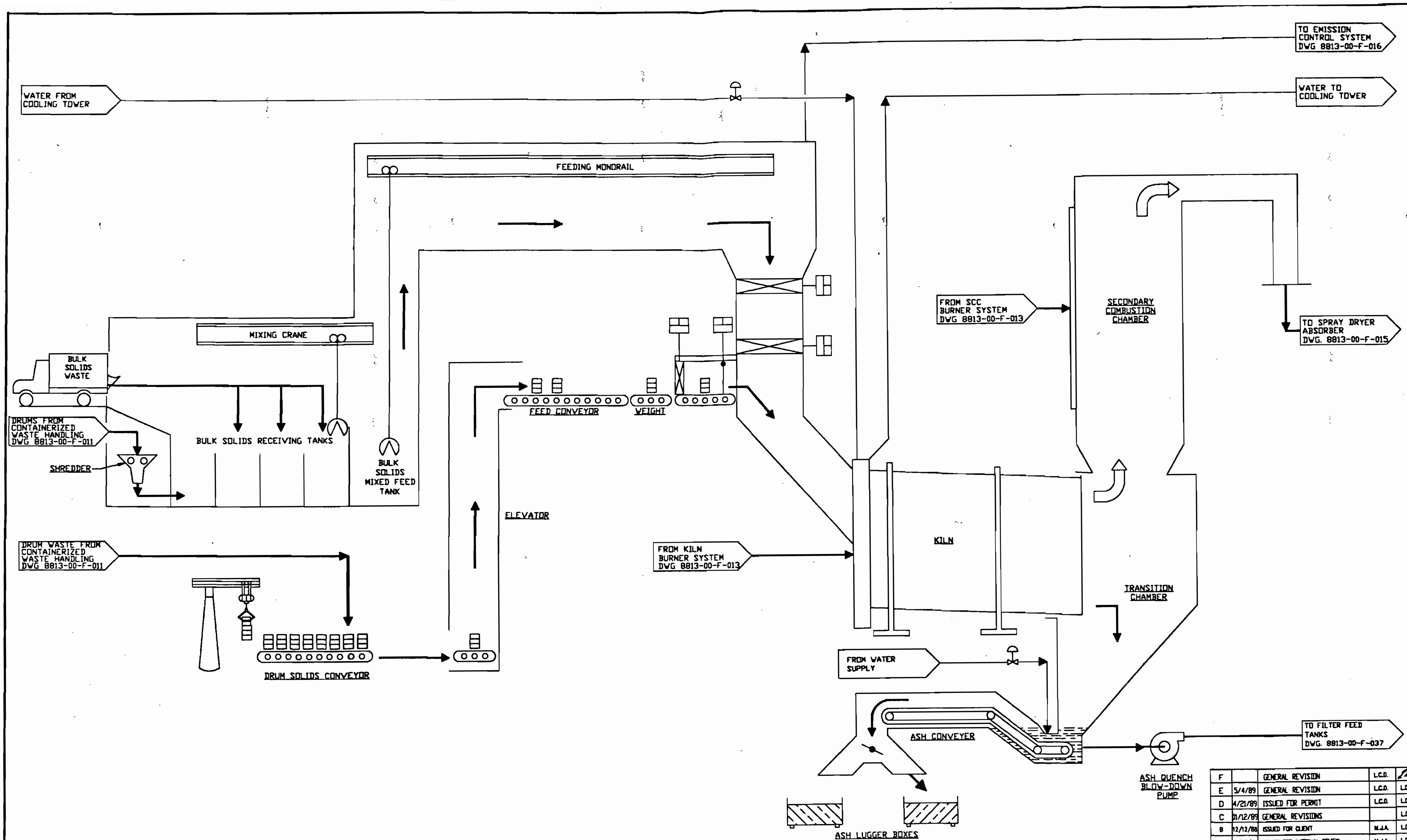
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC TREATMENT BURNER SYSTEM FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/29/88			8813-00-F-013	G
CHKD	DATE		DATE		

8813F013

G-1



REV.	DATE	REVISION	BY	CHKD
F		GENERAL REVISION	L.C.D.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	01/12/89	GENERAL REVISIONS		L.D.C.
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	L.D.C.
A	11/23/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT THERMAL PROCESSING FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/22/88			8813-00-F-014	F
CHKD	DATE		DATE		

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

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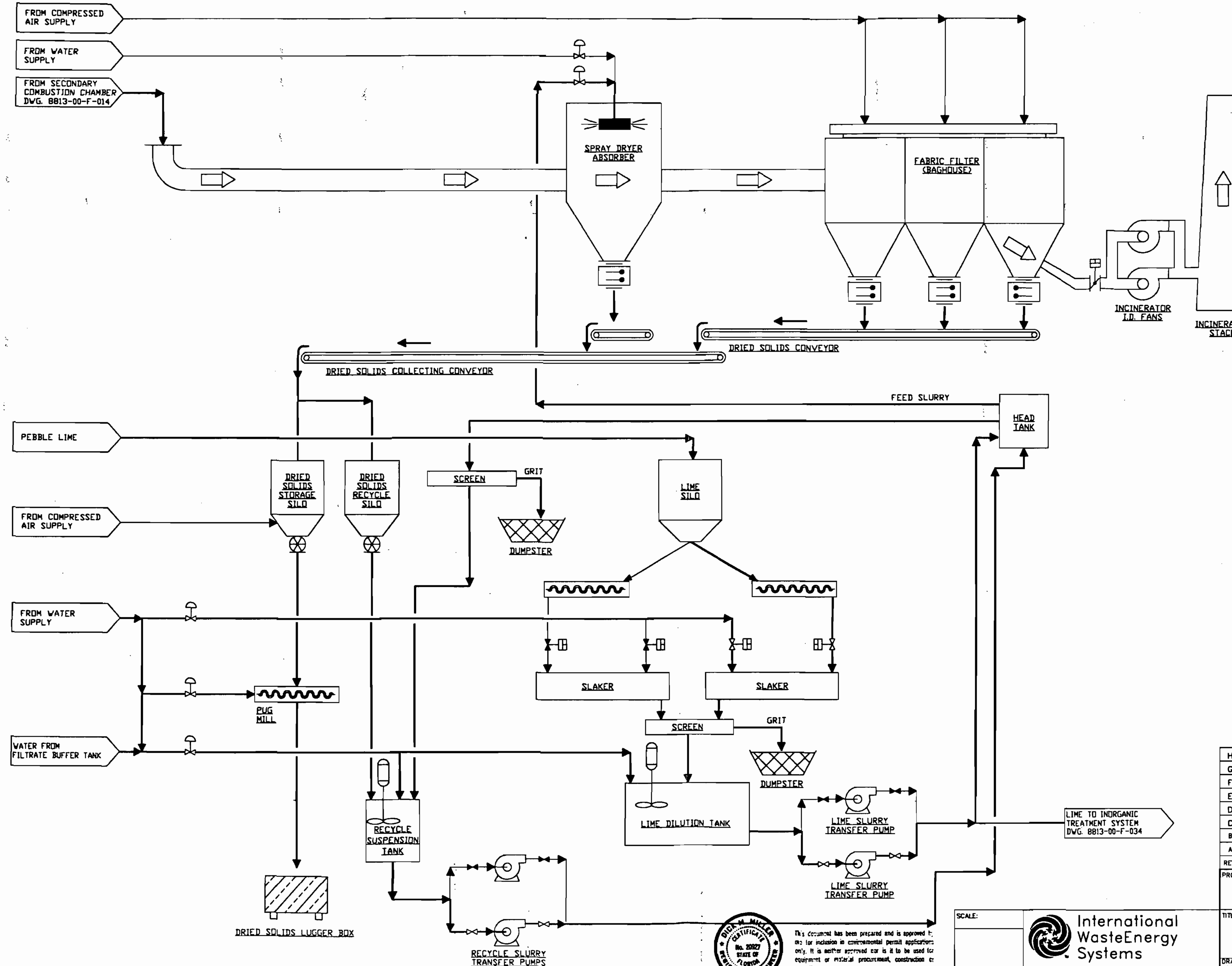
[signature] 4/25/89

8813F014

F-1



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9/25/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
H	9/20/89	GENERAL REVISION	R.L.M.	[illegible]
G	9/18/89	GENERAL REVISION	L.C.D.	LDC
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	5/1/89	ISSUED FOR PERMIT	LCD	L.D.C.
D	4/21/89	GENERAL REVISION	LCD	L.D.C.
C	01/12/89	GENERAL REVISIONS		L.D.C.
B	12/13/88	ISSUED FOR CLIENT	RLM	L.D.C.
A	12/01/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT

FLORIDA FIRST PROCESSING, INC.

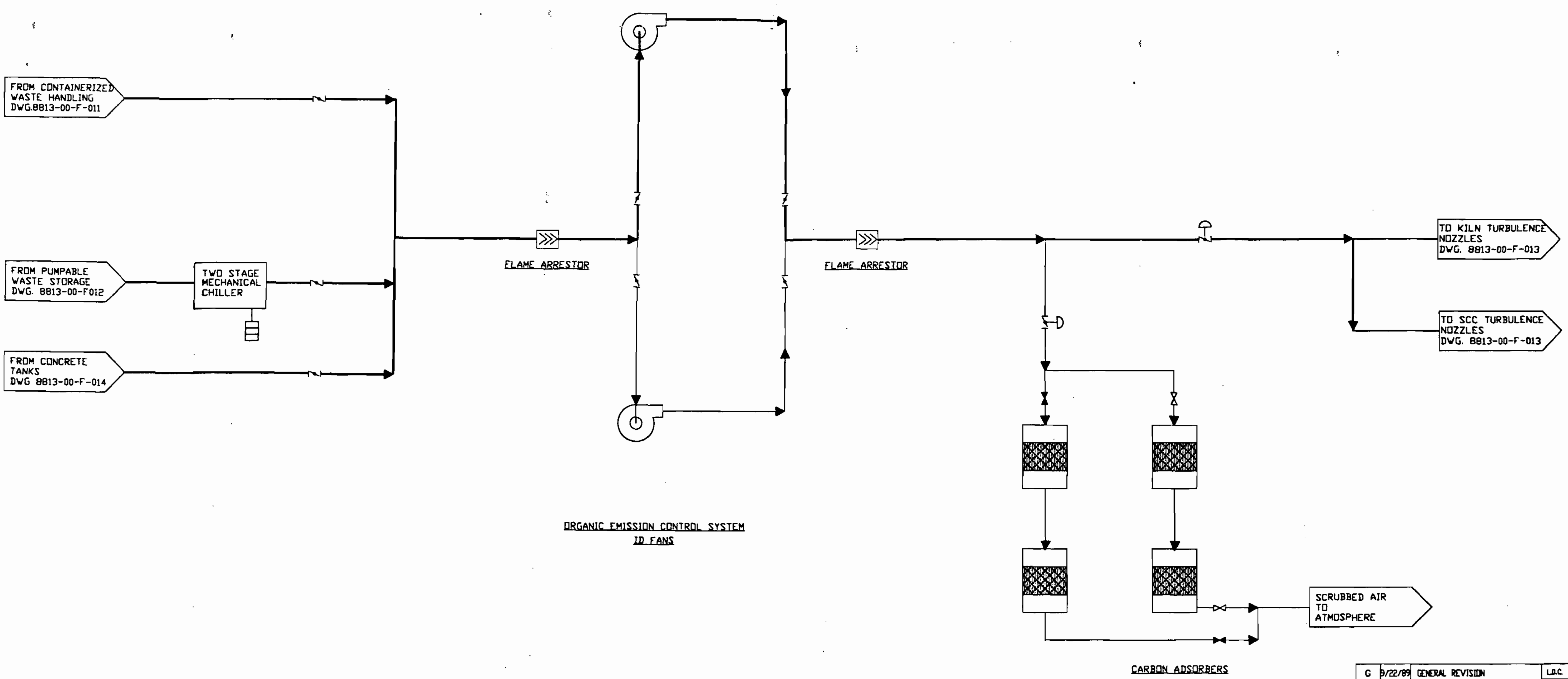
TITLE

ORGANIC TREATMENT
AIR POLLUTION CONTROL
FLOWSHEET

DRAWN M.J.A.	DATE 11/30/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-015	H

8813F015 . 09/20/89

H-1



REV.	DATE	REVISION	BY	CHKD
G	9/22/89	GENERAL REVISION	L.D.C.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT		L.D.C.
C	01/12/89	GENERAL REVISIONS		L.D.C.
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	L.D.C.
A	11/29/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

9/22/89

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Dick M. Miller 9/25/89

SCALE:

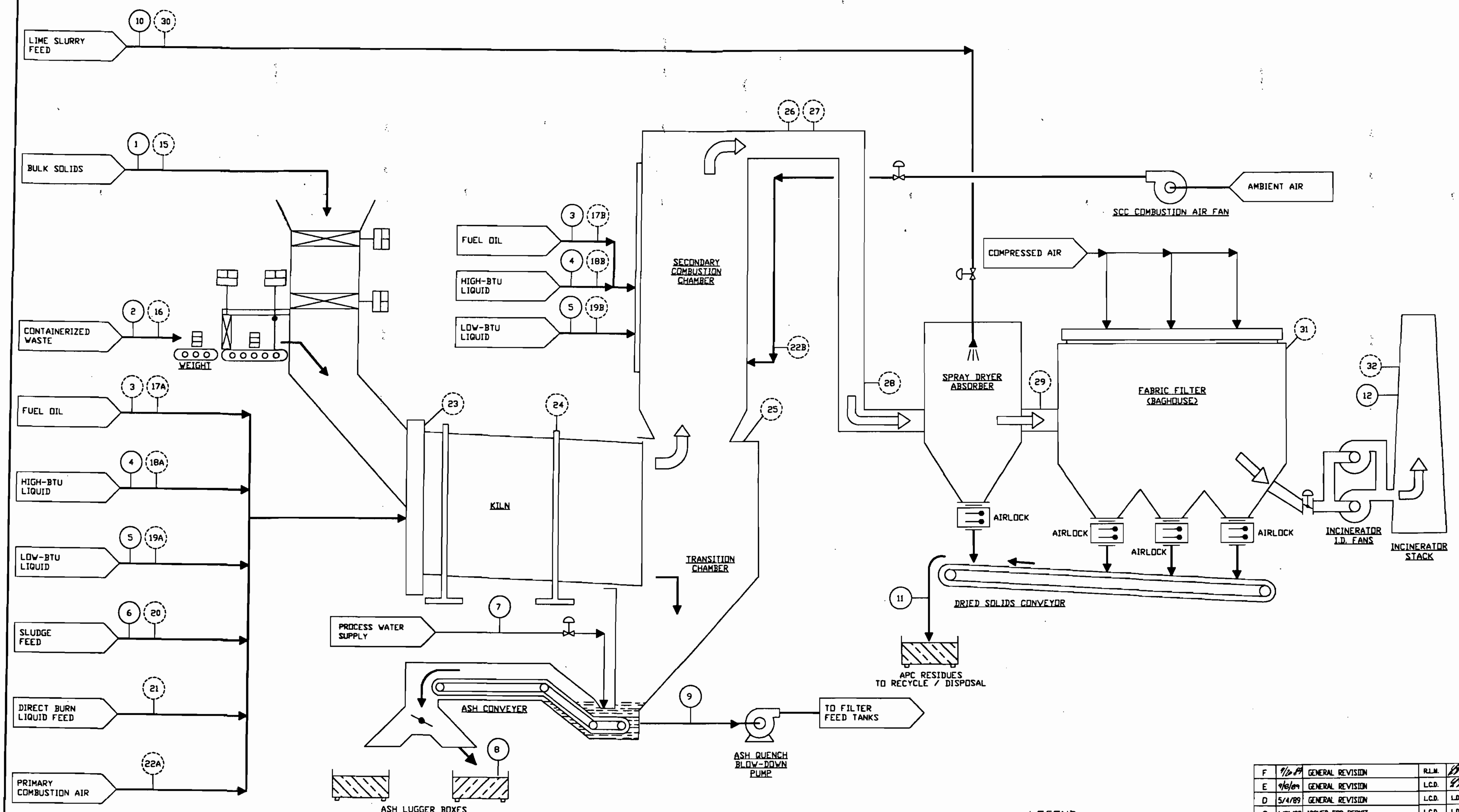
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC TREATMENT EMISSION CONTROL SYSTEM FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/29/88				
CHKD	DATE		DATE	8813-00-F-016	G

8813F016



LEGEND

(NO.) SAMPLING POINT

(NO.) MONITORING POINT

SCALE:

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Dick M. Miller 9/25/89

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
F	9/20/89	GENERAL REVISION	R.L.M.	[illegible]
E	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	4/11/89	GENERAL REVISION	L.C.D.	L.D.C.
A	3/8/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

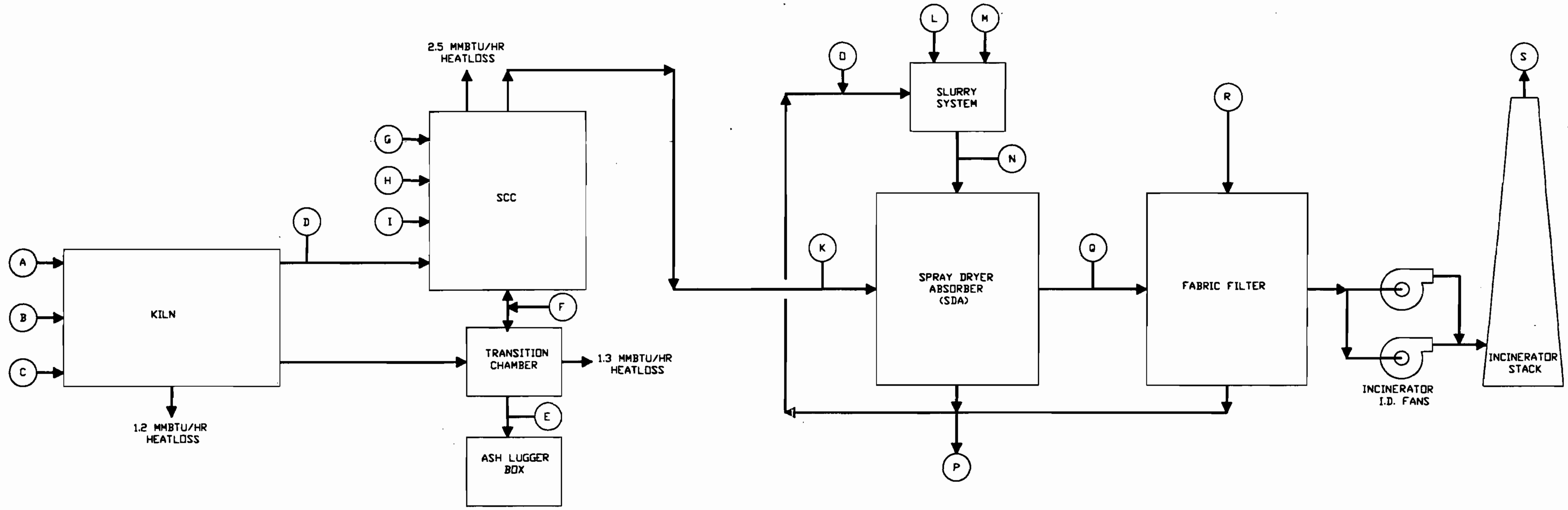
TITLE
TRIAL BURN SAMPLING AND MONITORING LOCATION FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	11/22/88			8813-00-F-017	F
CHKD	DATE		DATE		

09/20/89

8813F017

F-1



	▼ A	▼ B	▼ C	▼ D	E	F	▼ G	H	▲ I	▼ K	▼ L	▼ M	N	▼ O	P	▼ Q	▲ R	S
OTHER	5065		76879	77284			1908	382	18457	95964						95964	8742	104707
CHLORINE	339			7753	1056	2951	92											
WATER	2104		999	1761	5282		0		240	11948	37310		37931	621	149	49839		49727
ASH	7042			349			0			1761		40	7559	7519	1799	1320		1.54
HCL										444			0	0	0	4		4.44
NaOH												674	2082	1408	337	253		
SALTS													2791	2791	668	501		
TOTAL LB/HR	14550	0	77878	87147	6338	2951	2000	382	18697	110117	37310	714	50364	12339	2953	147882	8742	154440
MM BTU/HR	51.29	0	3.71	51.10	0.16	0	15.58	7.25	0	70.06	0	0	0	0.73	0.18	70.06	0	69.81
BTU/HR	3525	18993					7791	18993										
GPM/ACFM			16963	77613		6	4		4073	106292	75		121			62116	1904	65005
TEMP °F	60	60	60	1710	200	60	60	60	60	1850	60	60	60	355	365	375	60	365

LEGEND

A. KILN WASTE	G. SCC WASTE	M. LIME	S. FLUE GAS
B. VIRGIN FUEL	H. VIRGIN FUEL	N. LIME SLURRY	
C. COMB. AIR	I. COMB. AIR	O. SOLIDS RECYCLE	
D. KILN OUTLET		P. SOLIDS DISCHARGE	
E. ASH	K. SCC OUTLET/SDA INLET	Q. SDA OUTLET	▲ OUTPUT
F. WATER	L. WATER	R. PULSE AIR & LEAKAGE	▼ INPUT

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9/25/89

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

NOTE: THIS BALANCE REPRESENTS ONE POSSIBLE PROCESSING SCENARIO FOR THE VARIOUS WASTE STREAMS. THERE ARE MANY OTHER POSSIBLE PROCESSING COMBINATIONS INCLUDING "CAMPAIGN" OPERATIONS WITH ONE OR MORE PARTICULAR WASTES. THIS CASE REPRESENTS A TYPICAL AVERAGE LOAD.

REV.	DATE	REVISION	BY	CHKD
D	9/20/89	GENERAL REVISION	R.L.M.	
C	9/8/89	GENERAL REVISION	M.K.	
B	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
A	4/21/89	ISSUED FOR PERMIT		L.D.C.

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

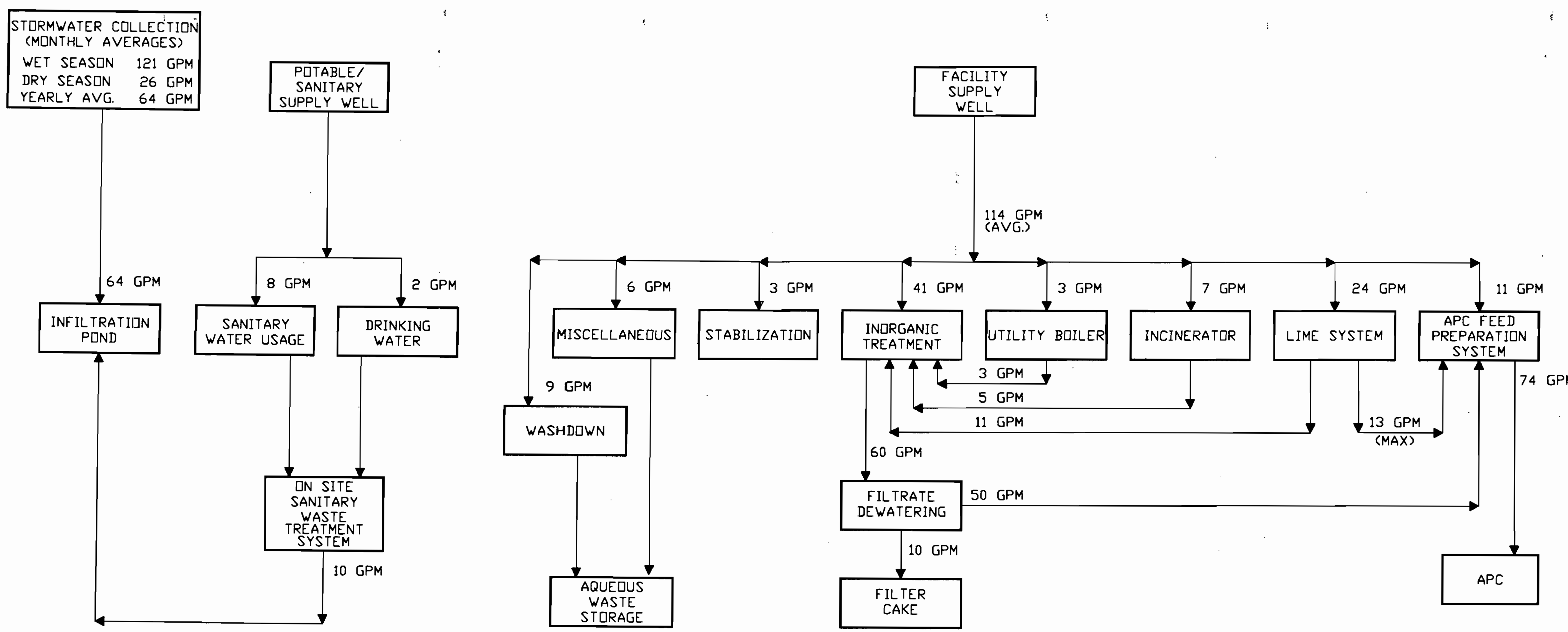
TITLE: HEAT AND MATERIAL BALANCE TRIAL BURN TEST #3

DRAWN: T.E.R. DATE: 4/21/89 | CHKD | APPD | DATE | DRAWING NO. 8813-00-F-018 | REV. D

09/20/89

8813F018

D-1



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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
B	5/4/89	GENERAL REVISION	L.C.D.	
A	4/28/89	ISSUED FOR REVIEW		

05/4/89

SCALE: NONE

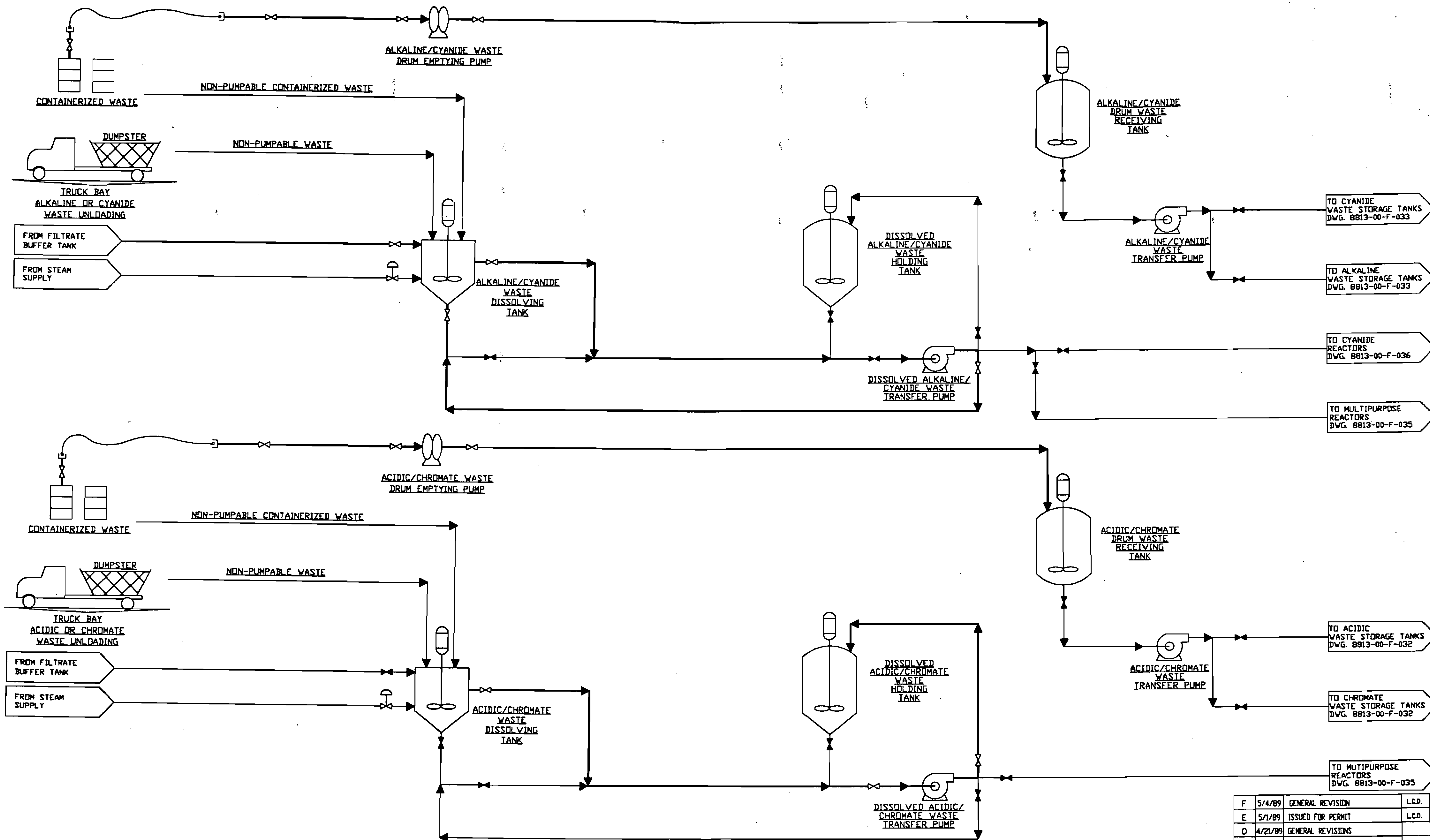
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: WATER BALANCE

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
T.E.R.	4/25/89			8813-00-F-019	B
CHKD	DATE		DATE		

8813F019



NOTE:
ALL TANKS, VESSELS AND THE WASTE HANDLING SYSTEM VENT TO THE INORGANIC EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 4/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
F	5/4/89	GENERAL REVISION	L.C.D.	[initials]
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	[initials]
D	4/21/89	GENERAL REVISIONS		[initials]
C	01/12/89	GENERAL REVISIONS		[initials]
B	12/13/88	ISSUED FOR CLIENT	M.J.A.	[initials]
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	[initials]

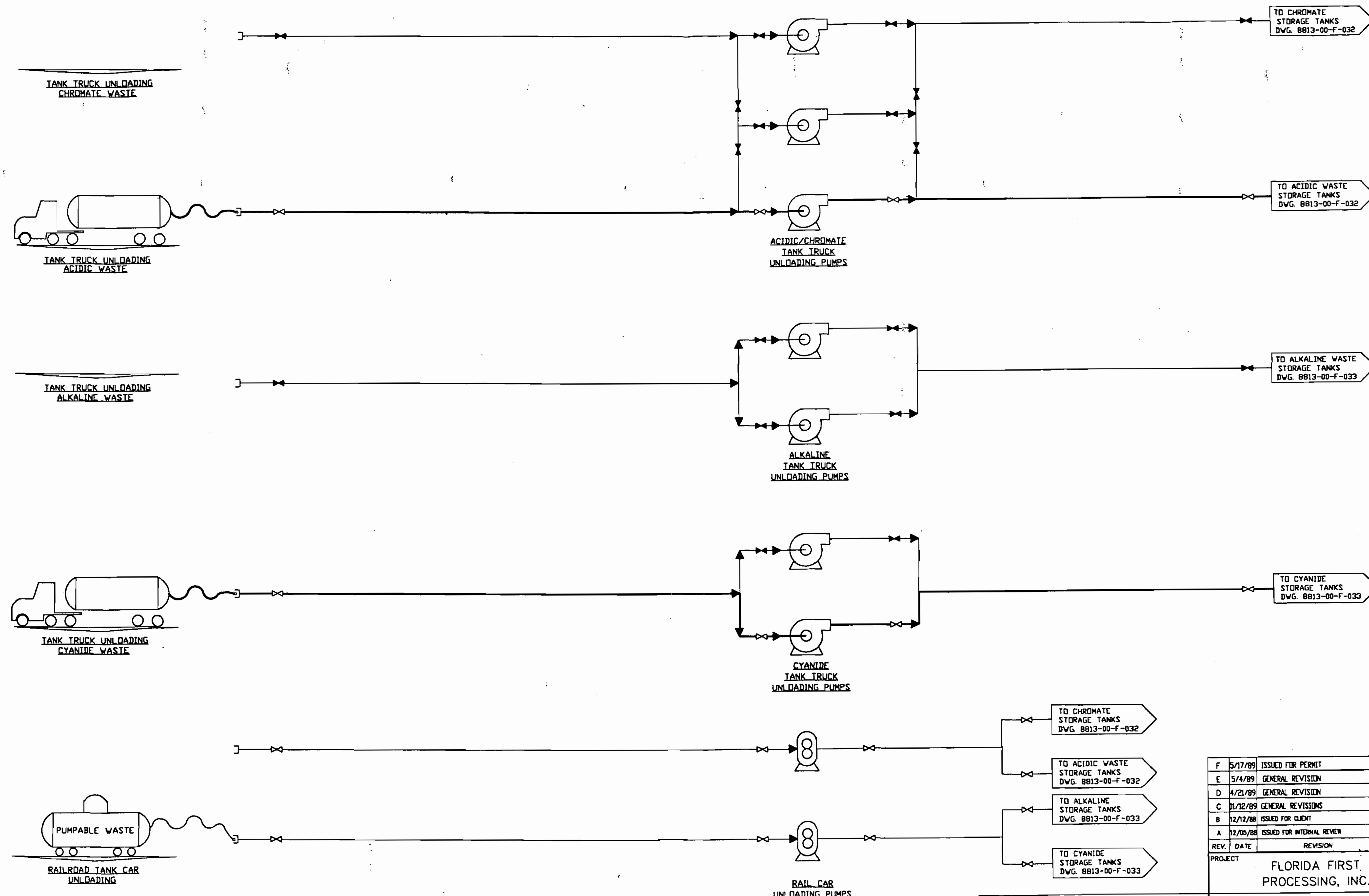
05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC TREATMENT CONTAINERIZED WASTE HANDLING FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/02/88			8813-00-F-030	F
CHKD	DATE		DATE		

8813F030



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	SDE
E	5/4/89	GENERAL REVISION	L.C.D.	SDE
D	4/21/89	GENERAL REVISION		SDE
C	01/12/89	GENERAL REVISIONS		SDE
B	12/12/88	ISSUED FOR CLIENT	R.A.G.	SDE
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	SDE

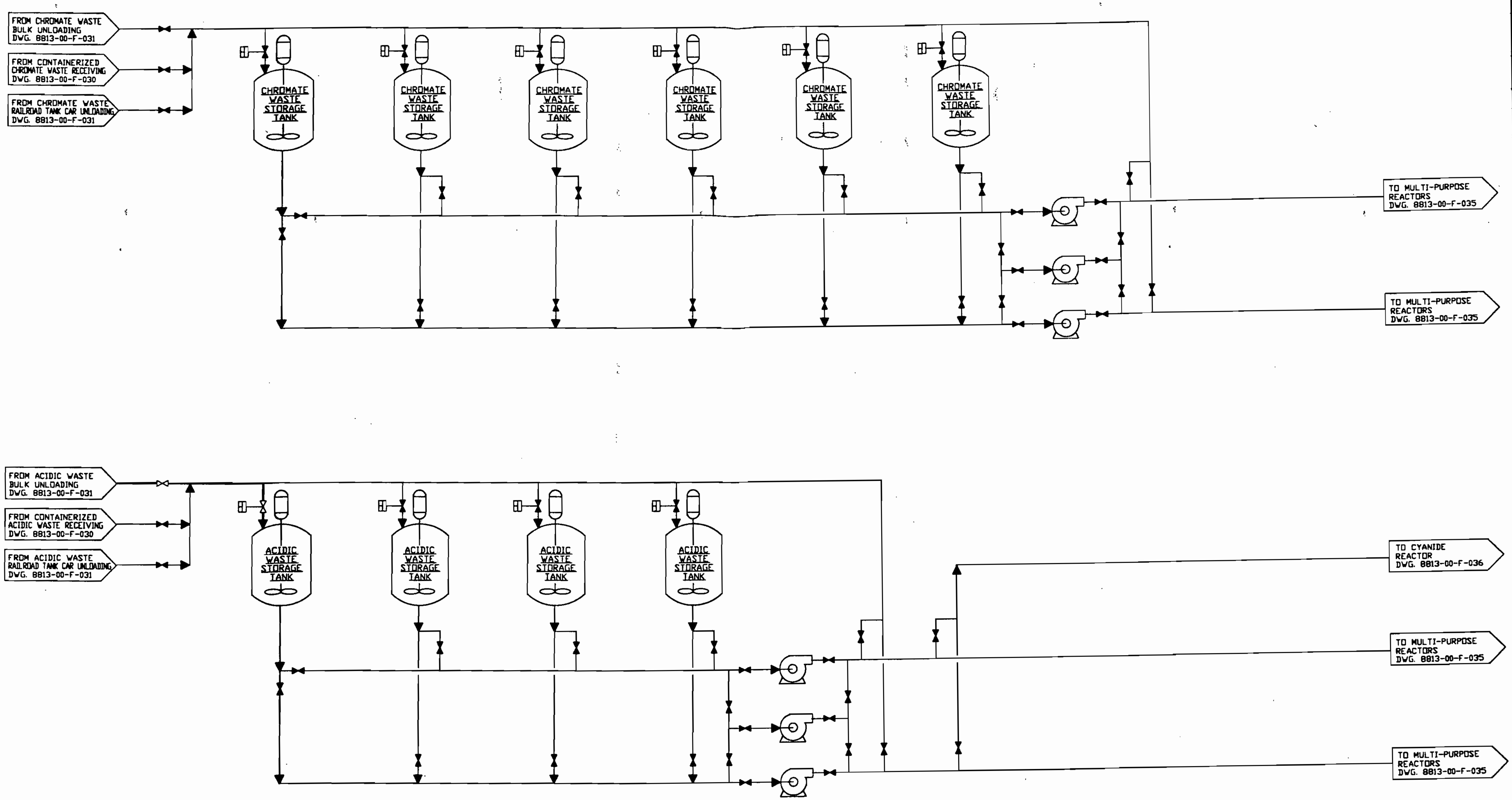
05/17/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC TREATMENT
BULK PUMPABLES HANDLING
FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/02/88			8813-00-F-031	F
CHKD	DATE		DATE		

8813F031



NOTE:

ALL STORAGE TANKS VENT TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	[signature]
D	4/21/89	GENERAL REVISION		[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/12/88	ISSUED FOR CLIENT	R.A.G.	[signature]
A	12/02/88	ISSUED FOR INTERNAL REVIEW	D.C.A.	[signature]

05/17/89

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT PUMPABLE WASTE STORAGE SHEET 1 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/2/88			8813-00-F-032	F
CHKD	DATE		DATE		

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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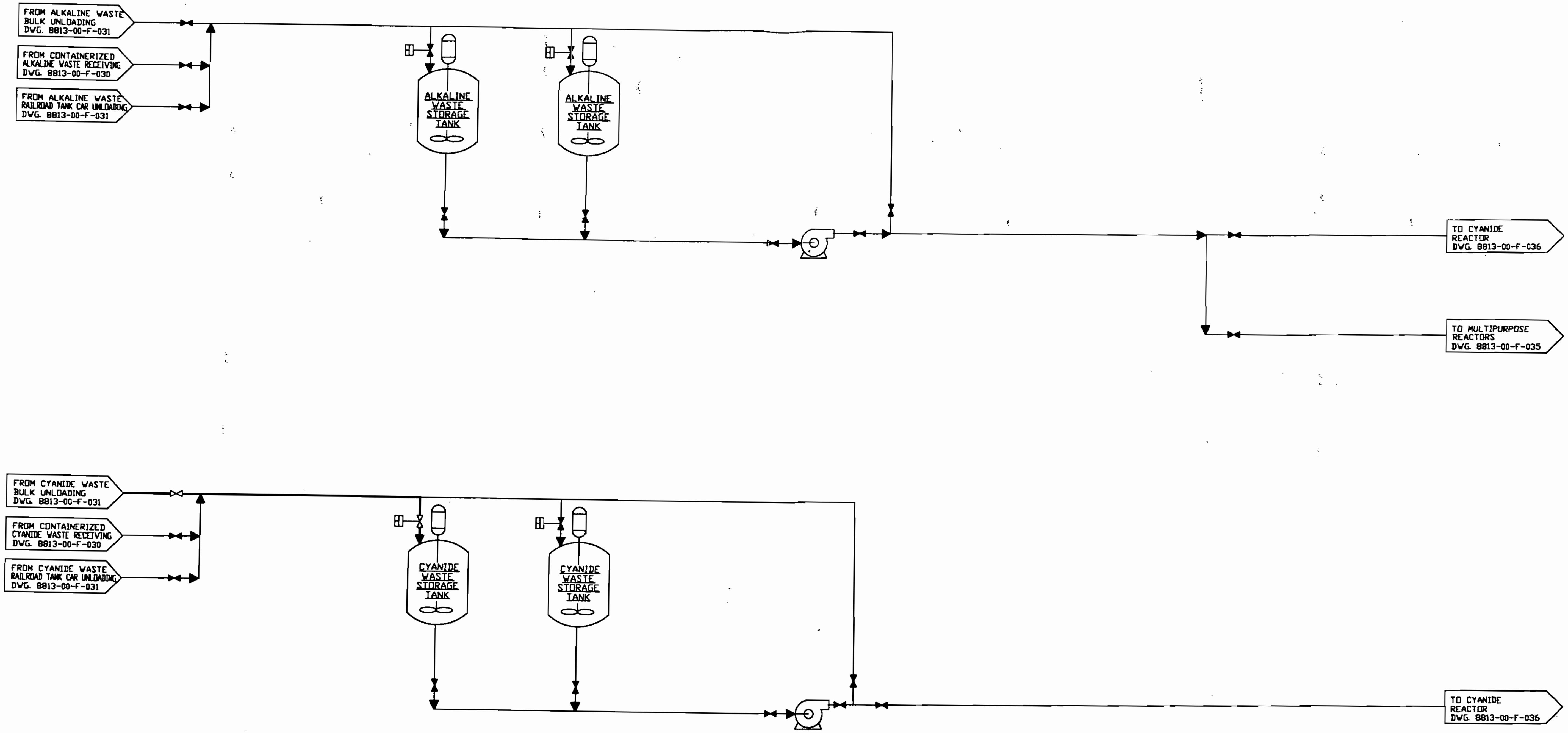
[signature] 9/25/89

8813F032



NOTE:
ALL STORAGE TANKS VENT TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	[signature]
D	4/21/89	GENERAL REVISION		[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/12/88	ISSUED FOR CLIENT	R.A.G.	[signature]
A	12/02/88	ISSUED FOR INTERNAL REVIEW	D.C.A.	[signature]

05/17/89

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[signature] 9/26/89

SCALE:

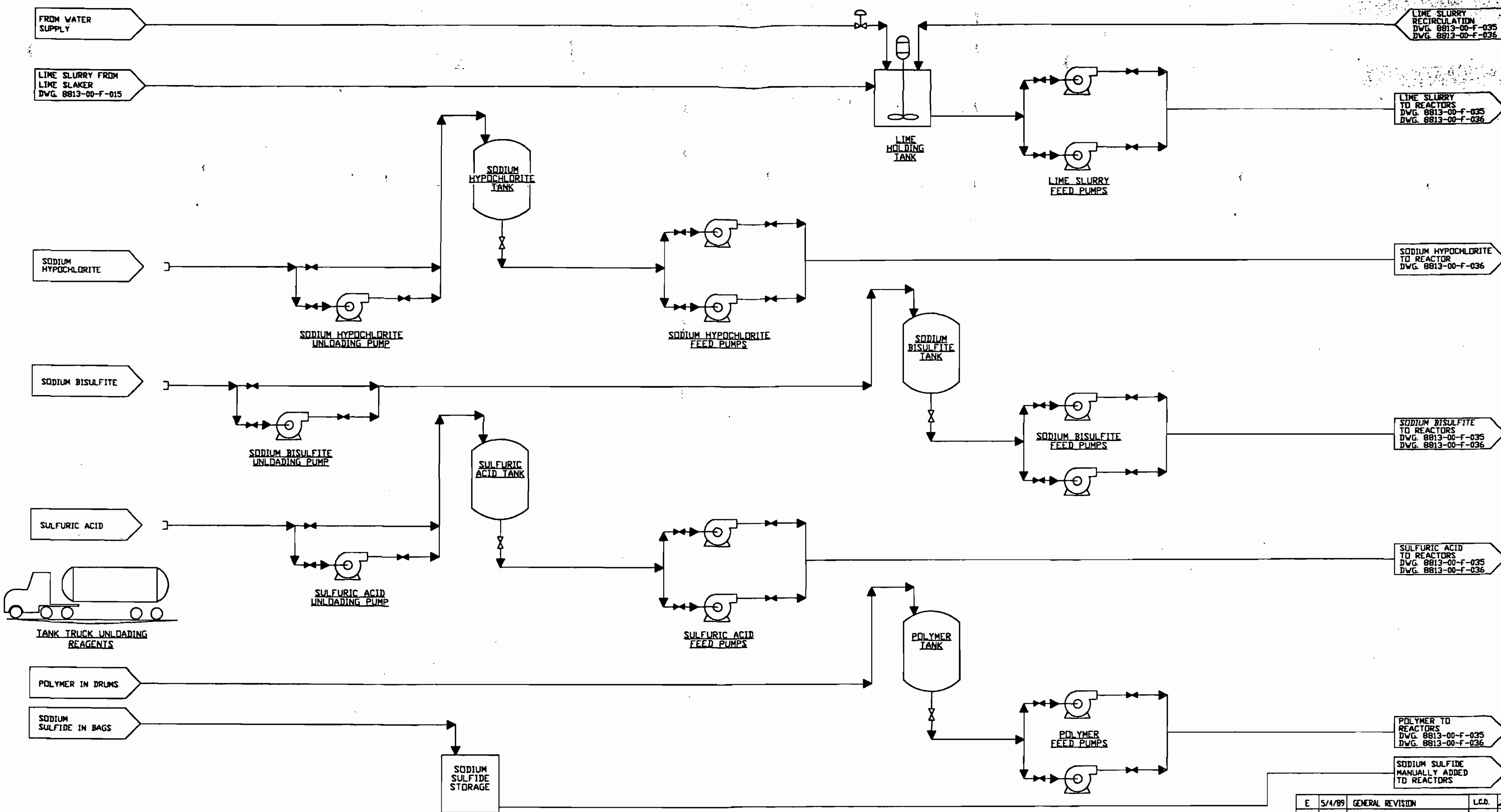
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT PUMPABLE WASTE STORAGE SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/2/88			8813-00-F-033	F
CHKD	DATE		DATE		

8813F033



NOTE:
ALL STORAGE TANKS VENT TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
E	5/4/89	GENERAL REVISION	L.C.D.	
D	4/21/89	ISSUED FOR PERMIT		
C	1/12/89	GENERAL REVISIONS		
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC TREATMENT REACTANTS STORAGE FLOWSHEET

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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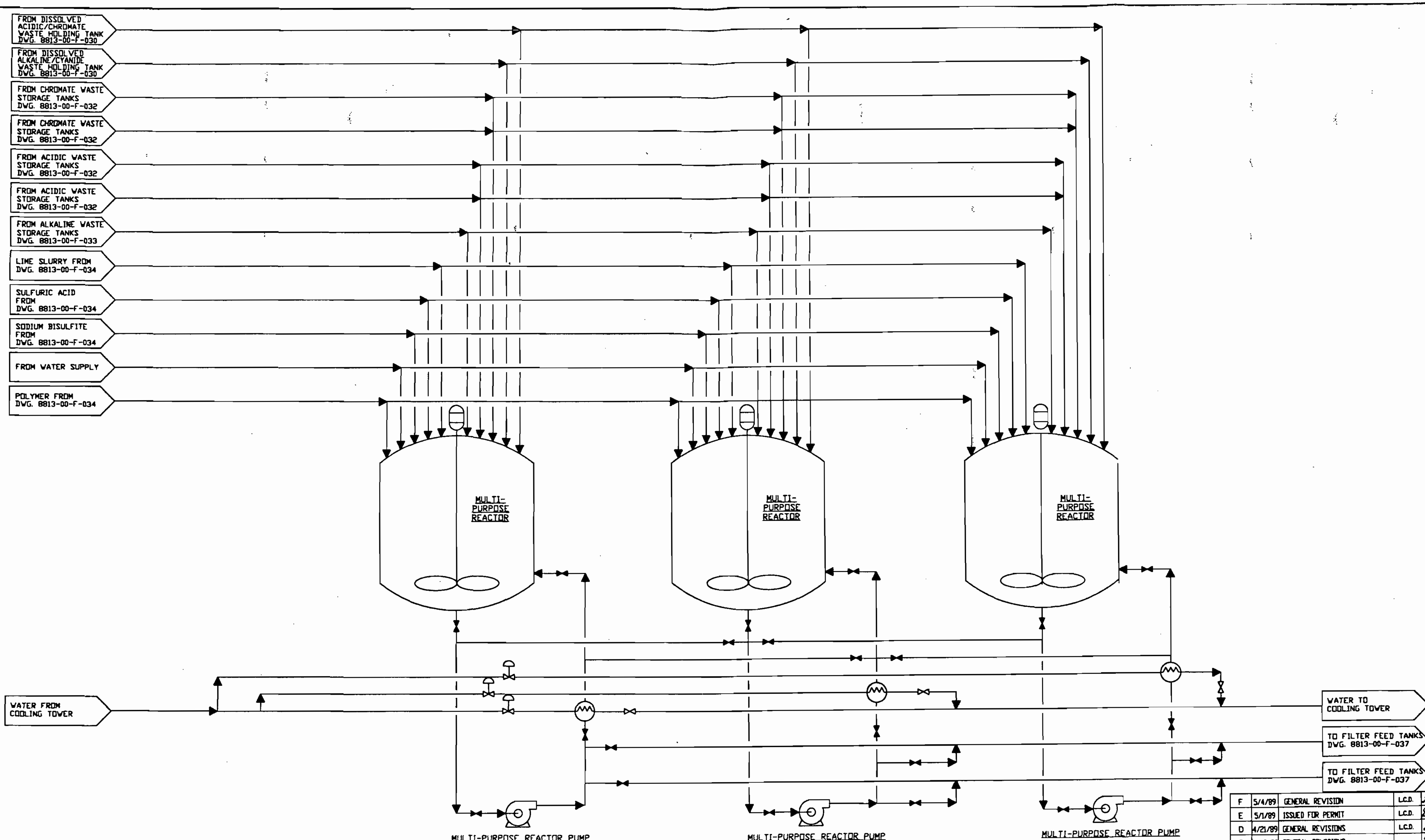
Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/05/88			8813-00-F-034	E
CHKD	DATE		DATE		

8813F034



NOTE:

THE REACTORS VENT TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
F	5/4/89	GENERAL REVISION	L.C.D.	
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	
D	4/21/89	GENERAL REVISIONS	L.C.D.	
C	01/12/89	GENERAL REVISIONS		
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	
A	12/02/88	ISSUED FOR INTERNAL REVIEW	D.C.A.	

05/4/89

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

PROJECT

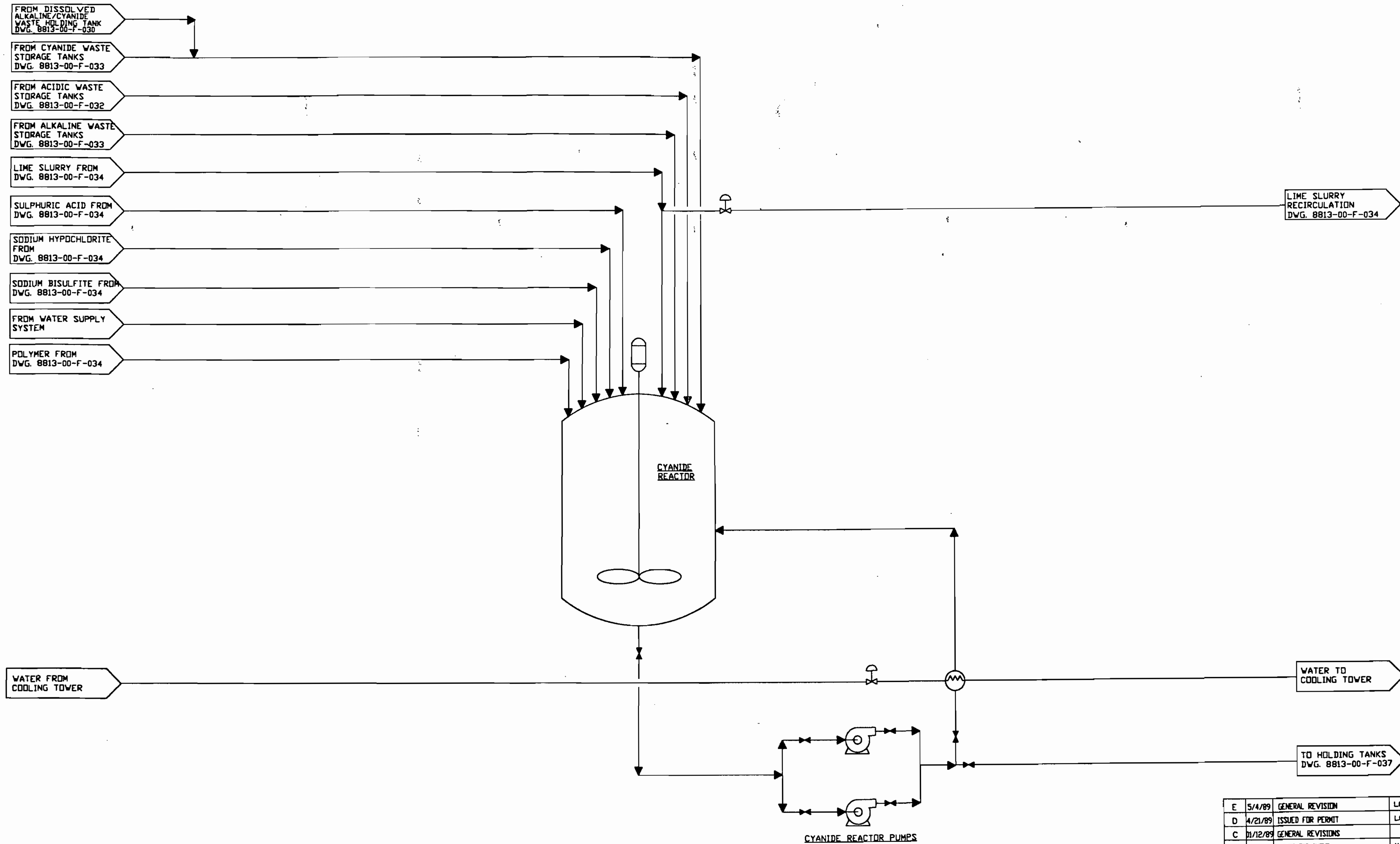
FLORIDA FIRST PROCESSING, INC.

TITLE

INORGANIC TREATMENT MULTIPURPOSE REACTORS FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/02/88			8813-00-F-035	F
CHKD	DATE		DATE		

8813F035



NOTE:
THE REACTOR VENTS TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
E	5/4/89	GENERAL REVISION	L.C.D.	[signature]
D	4/21/89	ISSUED FOR PERMIT	L.C.D.	[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/12/88	ISSUED FOR CLIENT	M.J.A.	[signature]
A	12/5/88	ISSUED FOR INTERNAL REVIEW	R.W.H.	[signature]

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC TREATMENT CYANIDE REACTOR FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
R.H.	12/5/88			8813-00-F-036	E
CHKD	DATE		DATE		

8813F036

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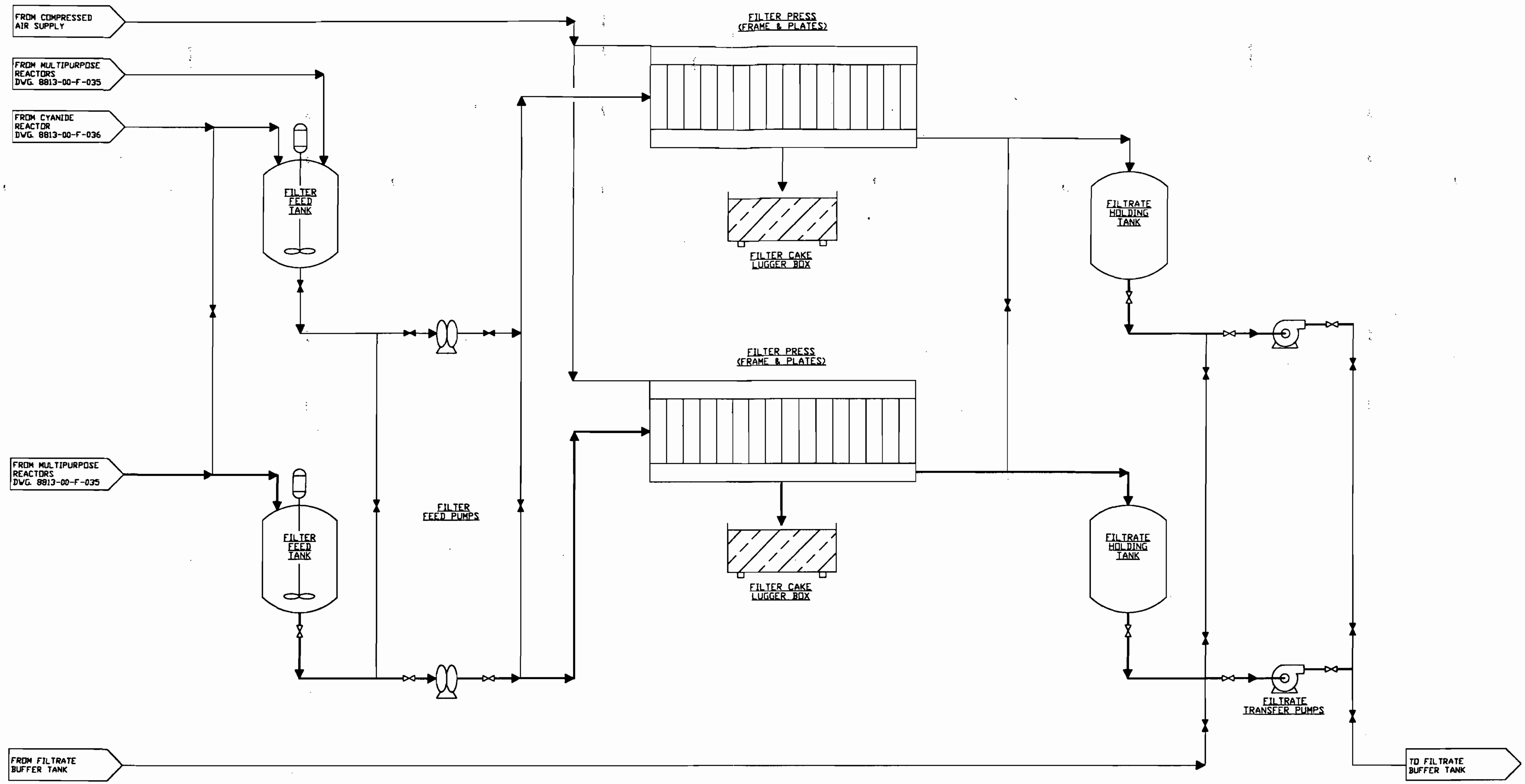
[signature] 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.



NOTE:
TANKS AND FRAME AND PLATE FILTER PRESSES VENT TO THE EMISSION CONTROL SYSTEM. DWG. 8813-00-F-038

REV.	DATE	REVISION	BY	CHKD
F	5/4/89	GENERAL REVISION	L.C.D.	[signature]
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	[signature]
D	4/21/89	GENERAL REVISIONS	L.C.D.	[signature]
C	01/12/89	GENERAL REVISIONS		[signature]
B	12/13/88	ISSUED FOR CLIENT	M.J.A.	[signature]
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	[signature]

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
INORGANIC TREATMENT SLUDGE DEWATERING FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/05/88			8813-00-F-037	F
CHKD	DATE		DATE		

8813F037

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

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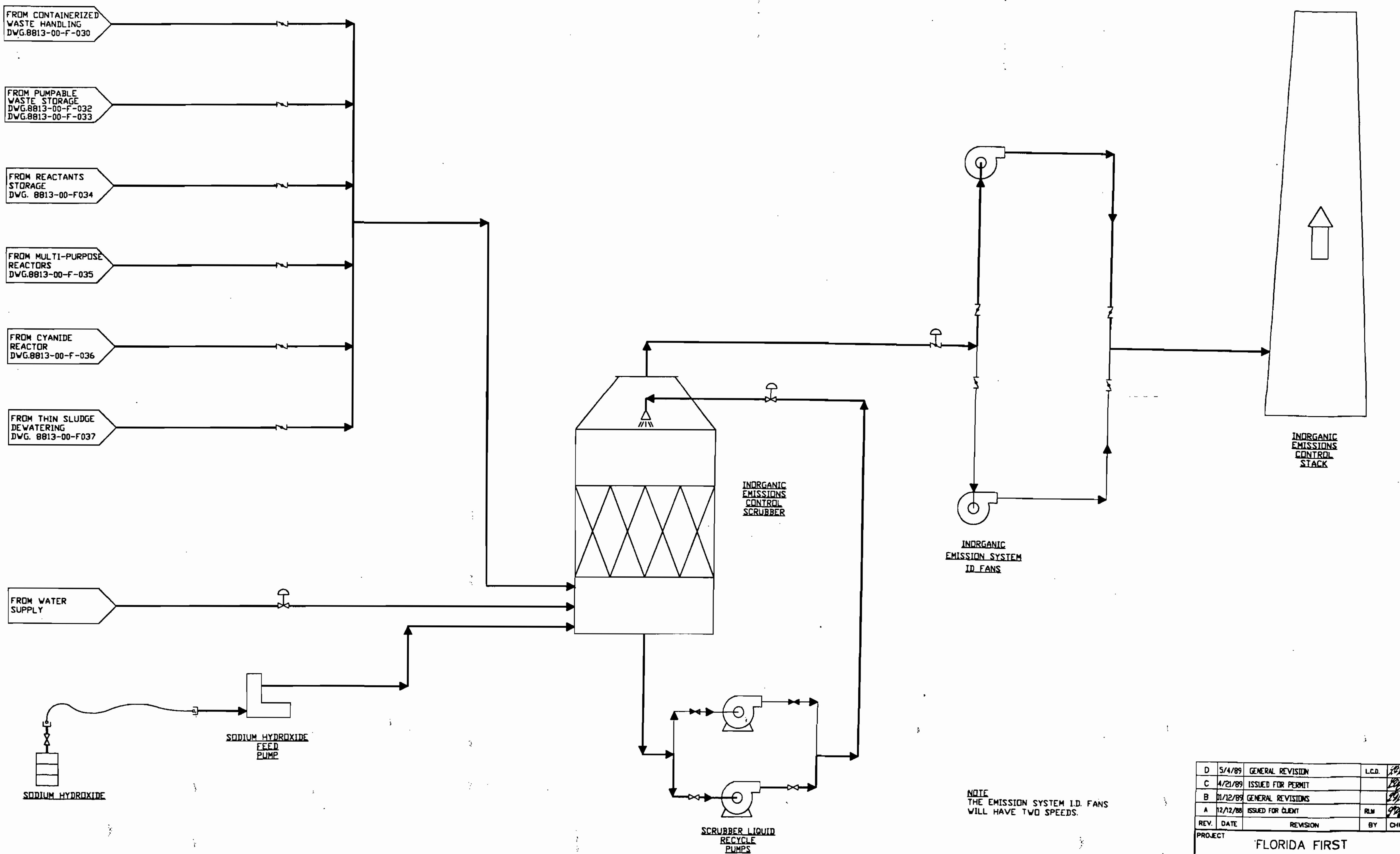
[signature] 9/25/89



NOTE
THE EMISSION SYSTEM I.D. FANS WILL HAVE TWO SPEEDS.

REV.	DATE	REVISION	BY	CHKD
D	5/4/89	GENERAL REVISION	L.C.D.	
C	4/21/89	ISSUED FOR PERMIT		
B	01/12/89	GENERAL REVISIONS		
A	12/12/88	ISSUED FOR CLIENT	RLM	

05/4/89

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE:

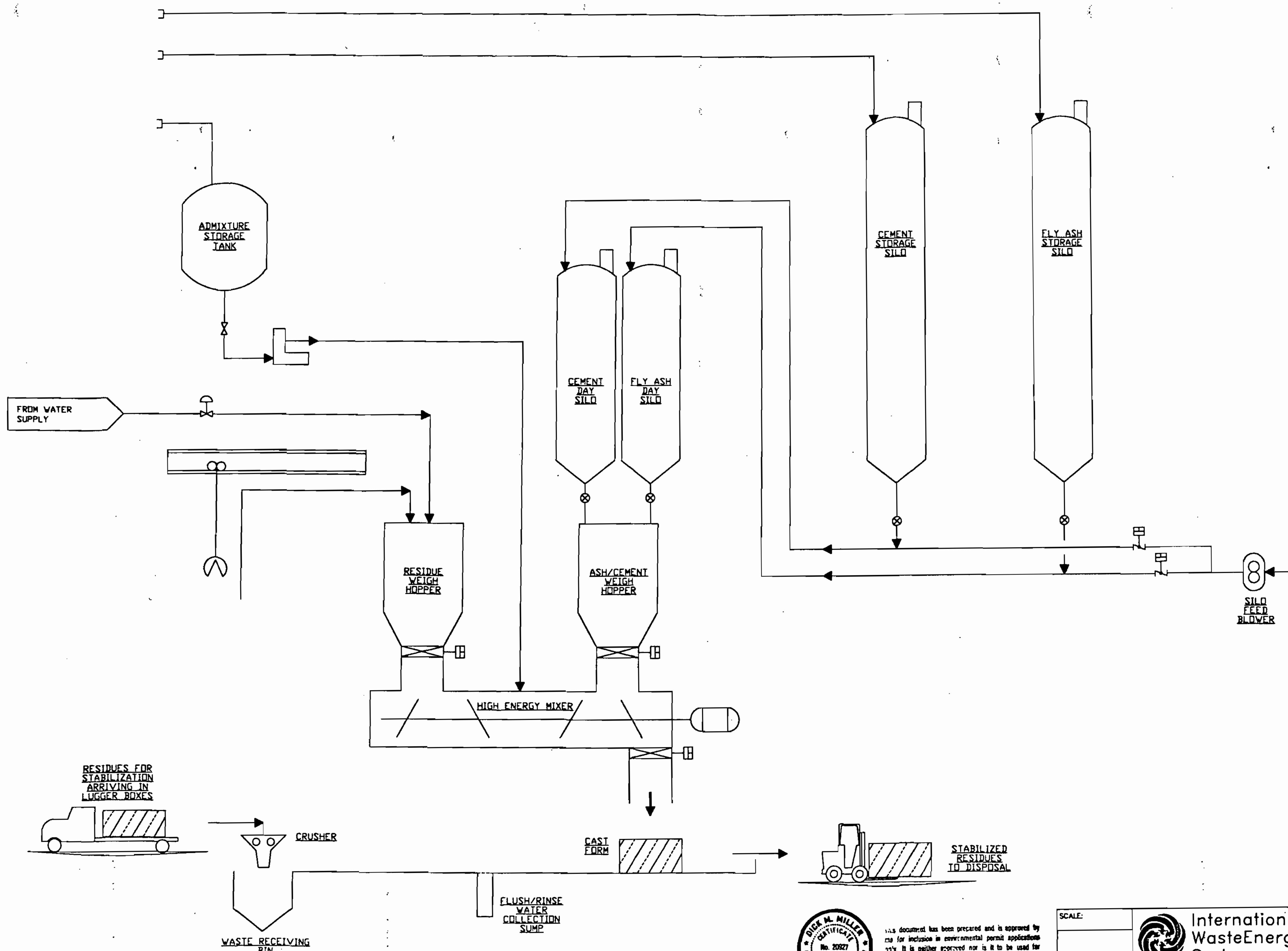
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT EMISSION CONTROL SYSTEM FLOWSHEET

DRAWN M.J.A.	DATE 11/29/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-038	D

8813F038



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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
D	5/4/89	GENERAL REVISION	L.C.D.	[signature]
C	5/1/89	ISSUED FOR PERMIT		[signature]
B	4/21/89	GENERAL REVISION		[signature]
A	3/9/89	ISSUED FOR INTERNAL REVIEW	M.K	[signature]

05/4/89

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
STABILIZATION FLOWSHEET

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	3/7/89			8813-00-F-039	D
CHKD	DATE		DATE		

8813F039

GENERAL EQUIPMENT

- CENTRIFUGAL PUMP
- GEAR PUMP, LOBE PUMP OR POSITIVE DISPLACEMENT, HIGH PRESSURE BLOWER
- AIR-OPERATED DIAPHRAGM PUMP
- POSITIVE DISPLACEMENT PISTON PUMP
- LOW PRESSURE TANK WITH DISH BOTTOM AND TOP, ON LEGS
- ATMOSPHERIC TANK WITH CONICAL BOTTOM ON LEGS
- OPEN ATMOSPHERIC TANK WITH CONICAL BOTTOM ON LEGS
- CENTRIFUGAL FAN
- IN-LINE FILTER
- EDUCTOR
- STRAINER
- DUPLEX STRAINER
- STEAM TRAP. THIS IS EQUIVALENT TO :
- SCREW CONVEYOR
- BELT CONVEYOR OR DRAG-LINK CONVEYOR
- ROLLER CONVEYOR
- BUCKET CONVEYOR
- HEAT EXCHANGER
- AGITATOR
- EQUIPMENT PACKAGE OUTLINE
- GRINDER

INSTRUMENTS

- INTERNAL SYSTEM LINK
- ELECTRICAL SIGNAL
- INSTRUMENT FURNISHED BY EQUIPMENT PACKAGE VENDOR
- INSTRUMENT FOR SINGLE MEASURED VARIABLE AND ANY NUMBER OF FUNCTIONS. INSTRUMENT IS LOCALLY MOUNTED
- FRONT-OF-MAIN-PANEL-MOUNTED INSTRUMENT.
- FRONT-OF-LOCAL-PANEL-MOUNTED INSTRUMENT.
- REAR-OF-PANEL-MOUNTED INSTRUMENT.
- PROGRAMMABLE CONTROLLER DIGITAL OUTPUT
- PROGRAMMABLE CONTROLLER DIGITAL INPUT
- DISTRIBUTED CONTROL SYSTEM FUNCTIONAL BLOCK
- INTERLOCK INPUT
- INTERLOCK OUTPUT
- FLOW ELEMENT- ORIFICE PLATE WITH FLANGE TAPS
- ROTAMETER
- IN-LINE INSTRUMENT
- LEVEL-INTERNAL BALL FLOAT
- TOP-MOUNTED LEVEL TRANSMITTER
- PRESSURE DIRECT-CONNECTED
- WITH DIRECT-CONNECTED DIAPHRAGM SEAL
- WITH DIAPHRAGM SEAL, REMOTE MOUNTED
- THERMOCOUPLE,THERMOWELL AND TEMPERATURE TRANSMITTER ASSEMBLY
- INFRARED PYROMETER WITH PURGE AND COOLING SYSTEM
- ULTRA-SONIC LEVEL SWITCH

INSTRUMENTS

- RTD (IF APPLICABLE). SINGLE SENSOR IN WELL
- FILLED SYSTEM WITH CAPILLARY (REMOTE MOUNTED INSTRUMENT)
- PRESSURE REDUCING REGULATOR SELF-CONTAINED
- BACKPRESSURE REGULATOR SELF-CONTAINED
- PRESSURE/VACUUM RELIEF VALVE WITH FLAME ARRESTOR
- FLAME ARRESTOR
- PRESSURE RELIEF VALVE, SPRING-LOADED
- RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF
- RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF
- PRESSURE/VACUUM RELIEF MANHOLE COVER
- NORMAL MODE
- FO ← FAILURE MODE

FAIL POSITIONS
FC - FAIL CLOSED (ASSUMED)
FO - FAIL OPEN
FI - FAIL INDETERMINATE

NORMAL MODE IDENTIFICATION SHOULD ONLY BE USED FOR ON/OFF-TYPE VALVES WHOSE POSITION CANNOT BE SHOWN BY SHADING THE VALVE BODY

- ELECTRIC SIGNAL TO PNEUMATIC DIAPHRAGM CONTROL OPERATOR.THIS IS EQUIVALENT TO:
- AS ELECTRIC ANALOG SIGNAL TO PNEUMATIC VALVE, WITH I/P CONVERTER OR POSITIONER
- ELECTRIC SIGNAL TO PNEUMATIC CYLINDER CONTROL OPERATOR.THIS IS EQUIVALENT TO:
- AS PNEUMATIC CYLINDER, SPRING RETURN TO FAIL POSITION, FOR ELECTRIC OR PNEUMATIC FAILURE WITH SOLENOID VALVE.
- NORMALLY OPEN

INSTRUMENTS

- NORMALLY CLOSED
- HAND CONTROL VALVE
- SOLENOID VALVE
- ELECTRIC MOTOR
- AUTOMATIC VALVE WITH OPEN AND CLOSED LIMIT SWITCHES INTERFACED WITH CONTROL ROOM. THIS IS EQUIVALENT TO:
- LOCAL ON-OFF PUSHBUTTON STATION
- LOCAL PANEL MOUNTED ON-OFF PUSHBUTTON STATION
- PANEL MOUNTED ON-OFF PUSHBUTTON STATION
- PANEL MOUNTED ON-OFF-AUTO SWITCH
- PANEL MOUNTED 2 POSITION SWITCH
- PANEL MOUNTED INDICATING LIGHT
- CYLINDER OPERATOR FOR HYDRAULIC CONTROLS WITH LIMIT SWITCHES

GENERAL PIPING

- PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW
- FILLED CAPILLARY TUBING
- INSTRUMENT AIR LINE
- DIRECTION OF FLOW
- (FLOW) HYDRAULIC PIPING (TOP OF "L" INDICATES FLOW DIRECTION)
- EXPANSION JOINT
- HOSE CONNECTION
- ATMOSPHERIC VENT
- QUICK CONNECT/DISCONNECT COUPLINGS/FLEXIBLE HOSE
- WELDED CAP
- PIPE FLANGE
- SCREWED PLUG OR CAP
- DRAIN

GENERAL PIPING

- LINE BREAK OR RESUMPTION POINT
- LINE DRAIN WITH VALVE AND SCREWED CAP OR PLUG
- SPRAY NOZZLE
- PIPE REDUCER
- HEAT TRACING
- PIPE INSULATION
- EQUIPMENT INSULATION/REFRACTORY

LINE SIZE — SERVICE DESIGNATOR — LINE NUMBER
2" - PI1 - 1067

VALVES

- GATE VALVE (OR GENERAL UNDEFINED VALVE TYPE)
- CHECK VALVE
- NEEDLE VALVE
- GLOBE VALVE
- BALL VALVE
- PLUG VALVE
- RAM SEAL VALVE
- BUTTERFLY VALVE OR DAMPER
- THREE-WAY VALVE
- ANGLE VALVE
- VALVE W/CONTROL OPERATOR
- MOTORIZED ROTARY AIRLOCK
- MOTORIZED PENDULUM DOUBLE-FLAP VALVE
- 4 WAY VALVE (SOLENOID OPERATED)
- PNEUMATIC OR HYDRAULICALLY OPERATED SLIDE GATE
- MANUAL SLIDE GATE
- LOUVERED DAMPER WITH OPERATOR

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW, RATE	RATIO (FRACTION)			
G	USERS CHOICE		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACCUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INTERLOCK LEGEND

I-1 EMERGENCY SHUTDOWN
I-2 SHUTS OFF ALL WASTE & FUEL
I-3 SHUTS OFF ALL WASTE
I-4 SHUTS OFF ONLY KILN WASTE & FUEL
I-5 SHUTS OFF ONLY KILN WASTE
I-10 BURNER CONTROL LOGIC
I-20 TANK FILLING HIGH LEVEL

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	M.K.	[illegible]
D	4/21/89	ISSUED FOR PERMIT		L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.H.L.	L.D.C.
A	1/3/89	ISSUE FOR INTERNAL REVIEW	RLM	JHJ

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

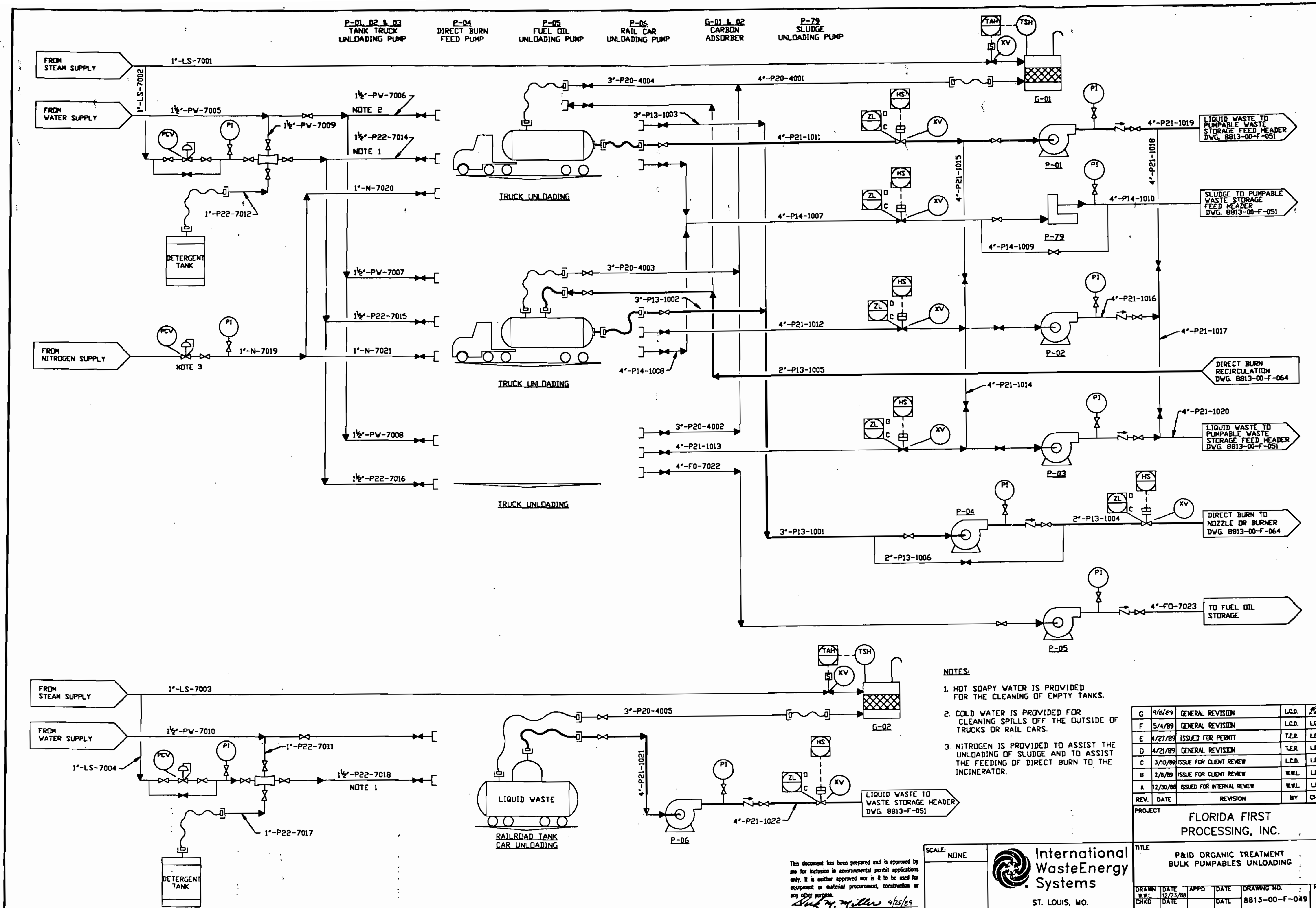
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID SYMBOLS AND NOMENCLATURE

DRAWN RLM | DATE 1/3/89 | APPD | DATE | DRAWING NO. 8813-00-F-048 | REV. E
CHKD | DATE | | DATE

8813F048

E-2



NOTES:

1. HOT SOAPY WATER IS PROVIDED FOR THE CLEANING OF EMPTY TANKS.
2. COLD WATER IS PROVIDED FOR CLEANING SPILLS OFF THE OUTSIDE OF TRUCKS OR RAIL CARS.
3. NITROGEN IS PROVIDED TO ASSIST THE UNLOADING OF SLUDGE AND TO ASSIST THE FEEDING OF DIRECT BURN TO THE INCINERATOR.

REV.	DATE	REVISION	BY	CHKD
G	9/6/89	GENERAL REVISION	L.C.D.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
D	4/21/89	GENERAL REVISION	T.E.R.	L.D.C.
C	3/10/89	ISSUE FOR CLIENT REVIEW	L.C.D.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID ORGANIC TREATMENT BULK PUMPABLES UNLOADING

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[illegible signature] 4/25/89

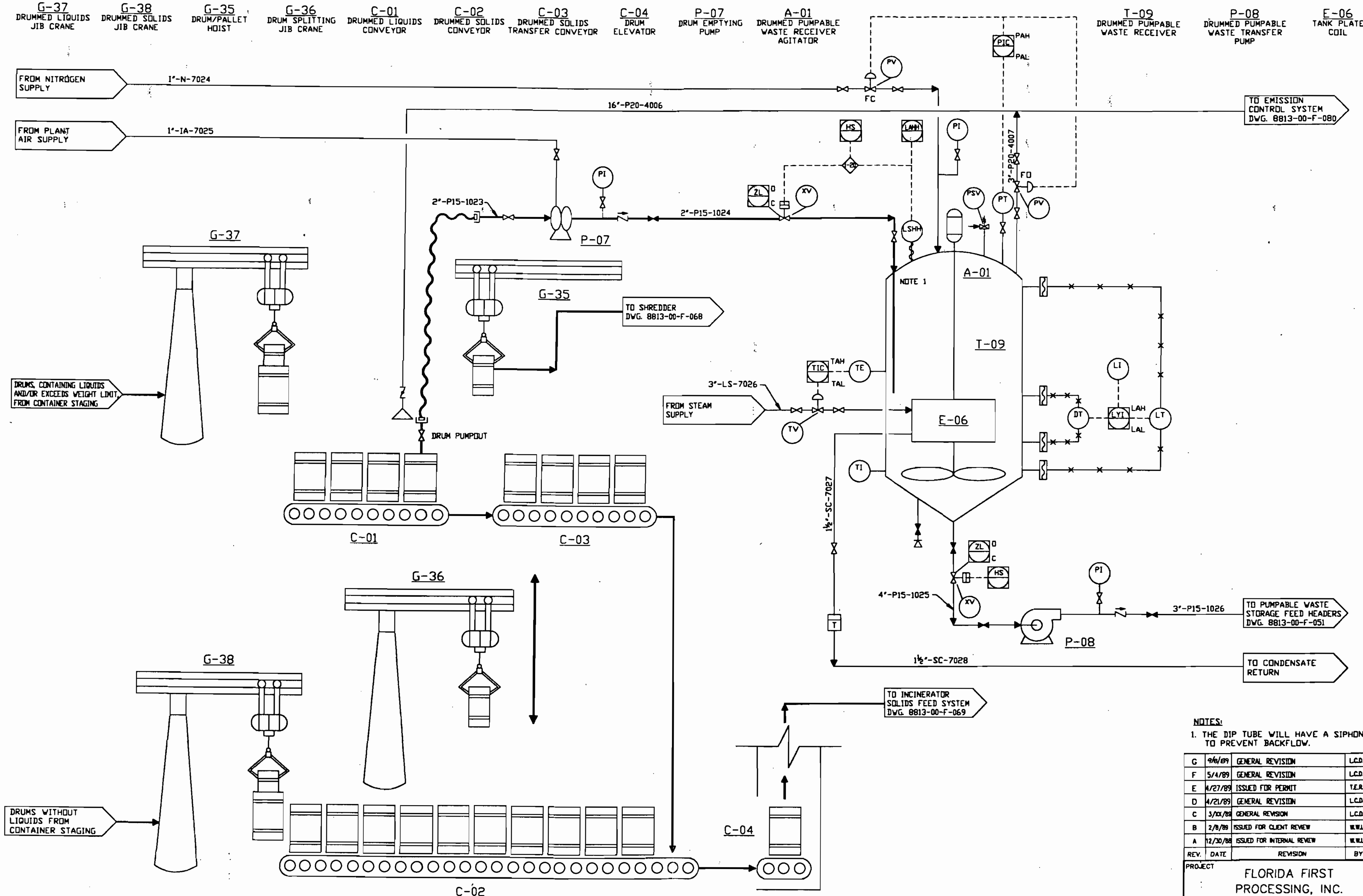
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.W.L.	12/23/88			8813-00-F-049	G
CHKD	DATE		DATE		

G-1

8813F049



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems

ST. LOUIS, MO.

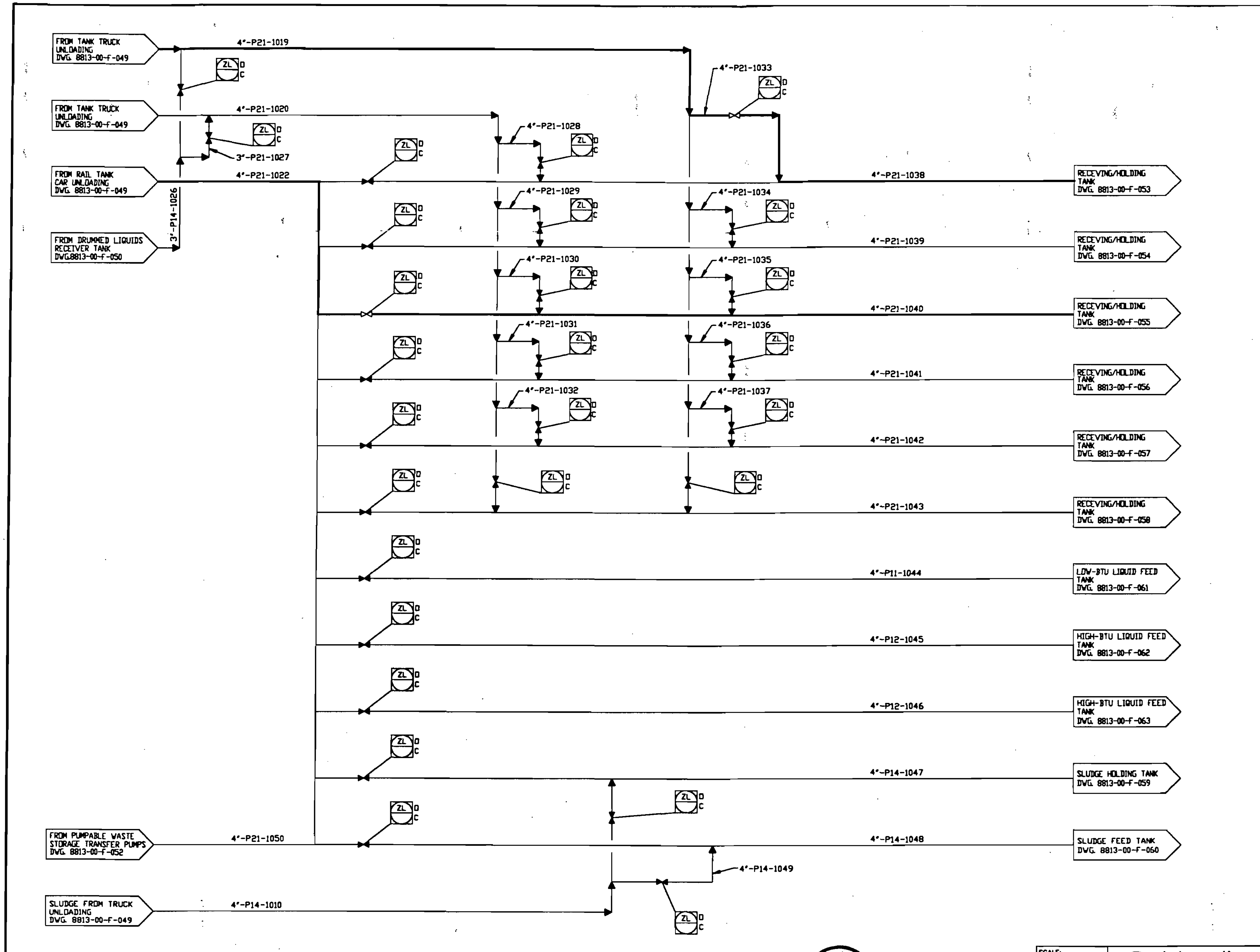
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID ORGANIC TREATMENT CONTAINERIZED WASTE HANDLING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.W.L.	12/27/88			8813-00-F-050	G
CHKD	DATE		DATE		

8813F050

G-73



REV.	DATE	REVISION	BY	CHKD
E	9/6/89	GENERAL REVISION	L.C.D.	
D	4/27/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
C	4/21/89	GENERAL REVISION	T.E.R.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

This document has been prepared and is approved by me for inclusion in environmental permit applications only. It is neither approved nor is it to be used for equipment or material procurement, construction or any other purpose.
Dick M. Miller 9/5/89

SCALE: NONE

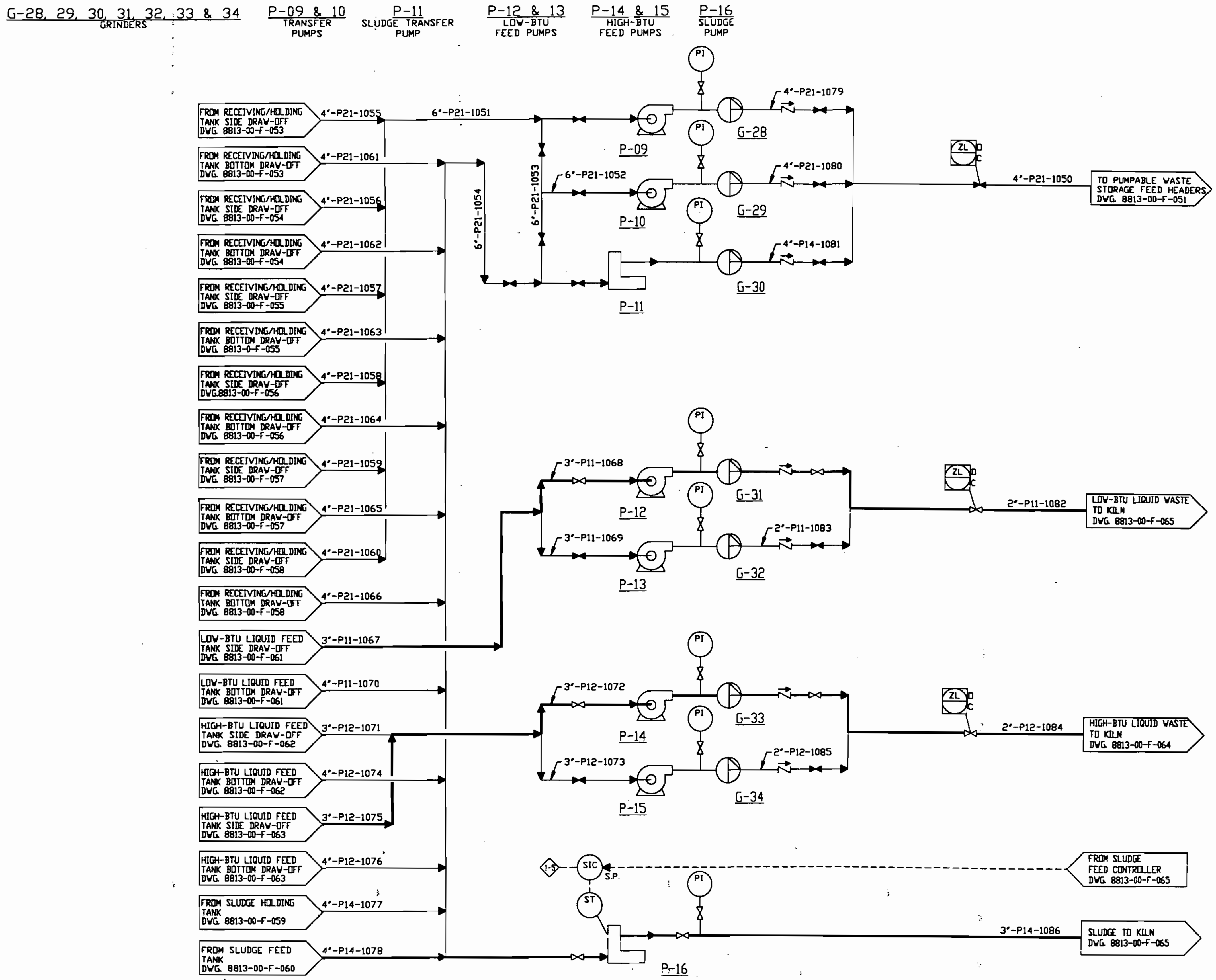
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID ORGANIC TREATMENT PUMPABLE WASTE STORAGE FEED HEADERS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-051	E
CHKD	DATE		DATE		

E-1

8813F051



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	
E	4/27/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	W.W.L.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT PUMPABLE WASTE STORAGE EMPTYING HEADERS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

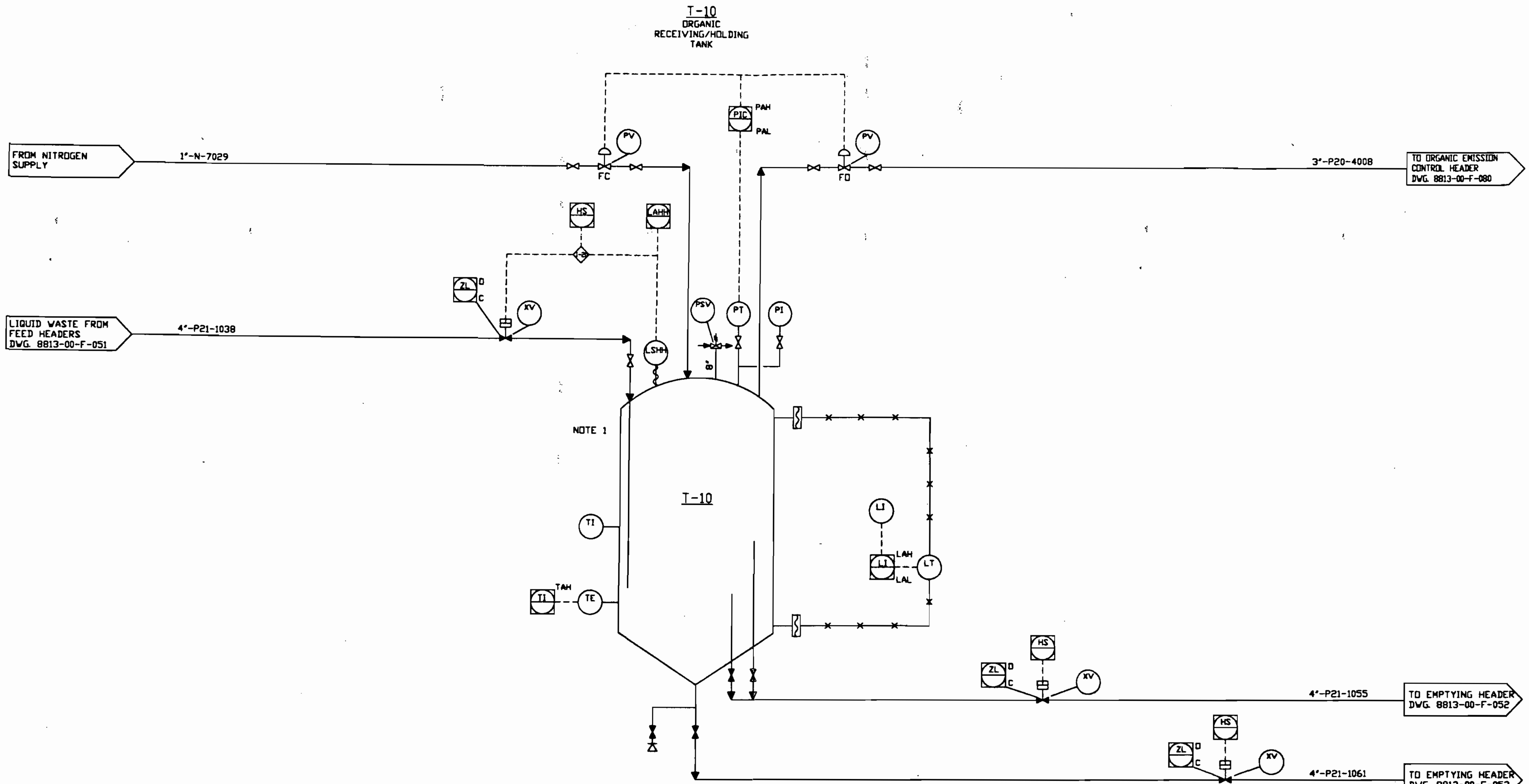
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-052	F
CHKD	DATE		DATE		

8813F052

F-1



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

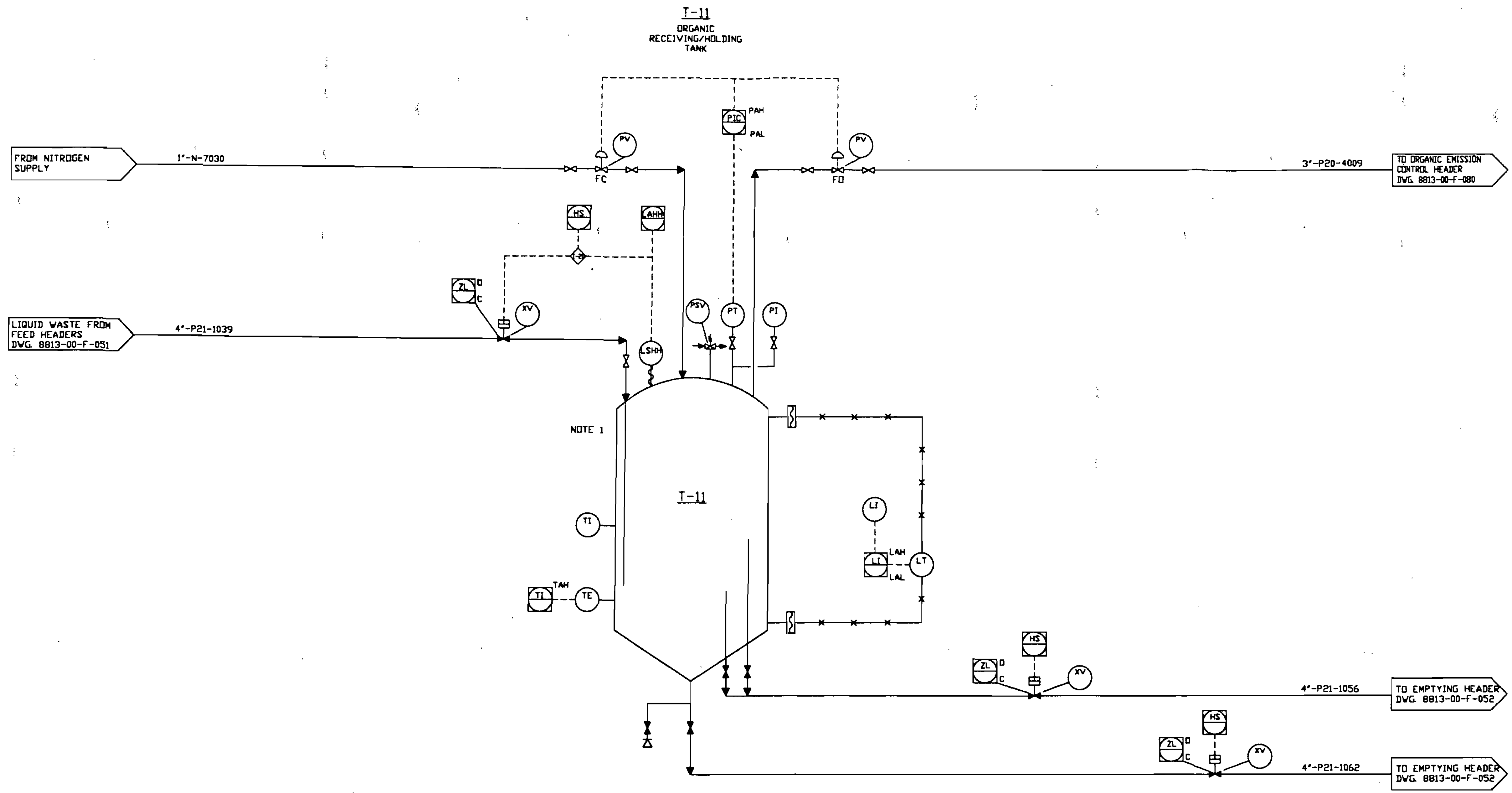
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID ORGANIC TREATMENT
ORGANIC RECEIVING/HOLDING TANK
SHEET 1 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-053	F
CHKD	DATE		DATE		

8813F053



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
E	9/6/89	GENERAL REVISION	L.C.D.	[signature]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
ORGANIC RECEIVING/HOLDING TANK
SHEET 2 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-054	E
CHKD	DATE		DATE		

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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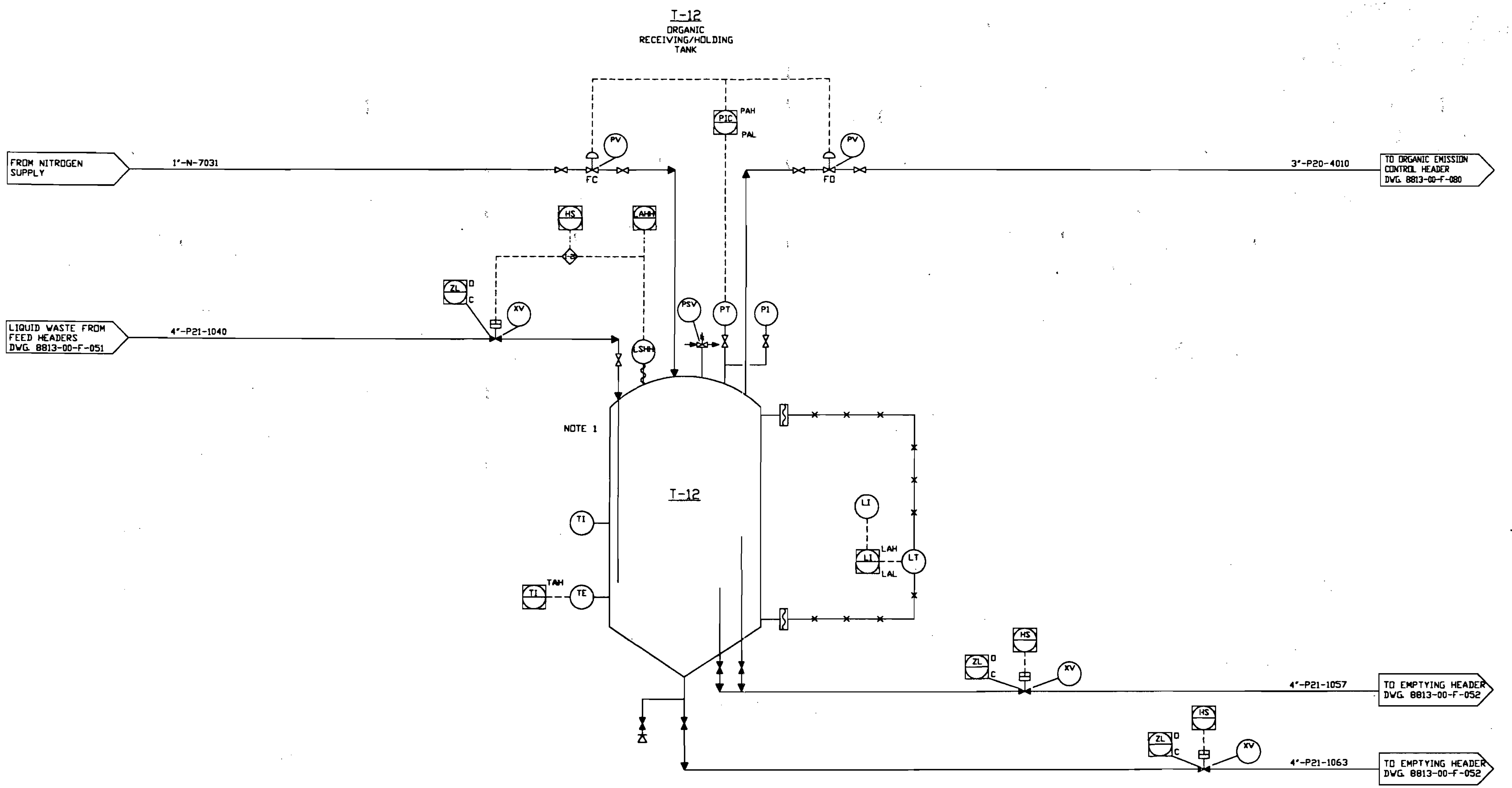
[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

8813F054

E-1



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

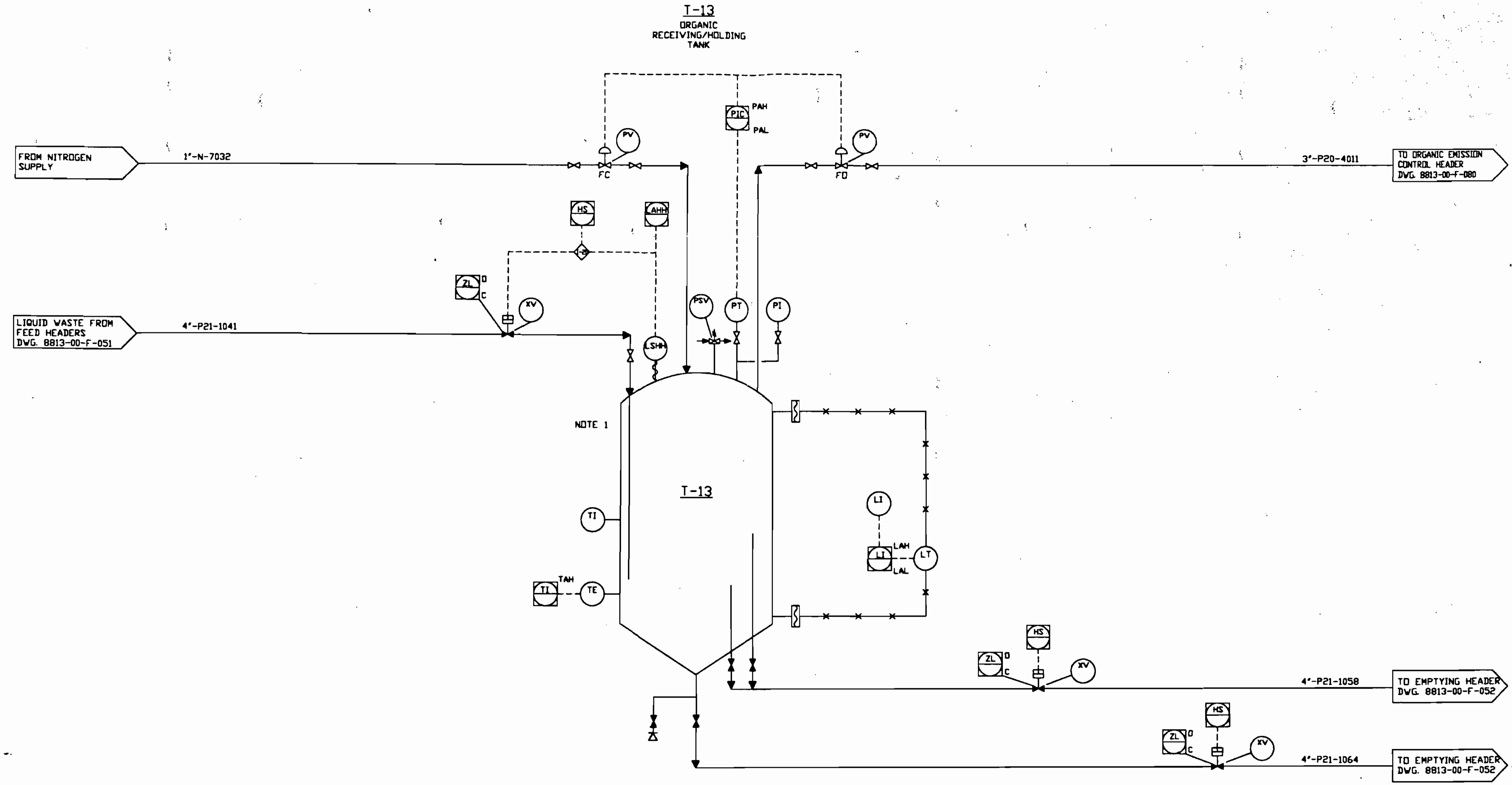
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE: P&ID ORGANIC TREATMENT ORGANIC RECEIVING/HOLDING TANK SHEET 3 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-055	E
CHKD	DATE		DATE		

8813F055

E-1



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	[signature]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT		L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 4/25/89

SCALE: NONE

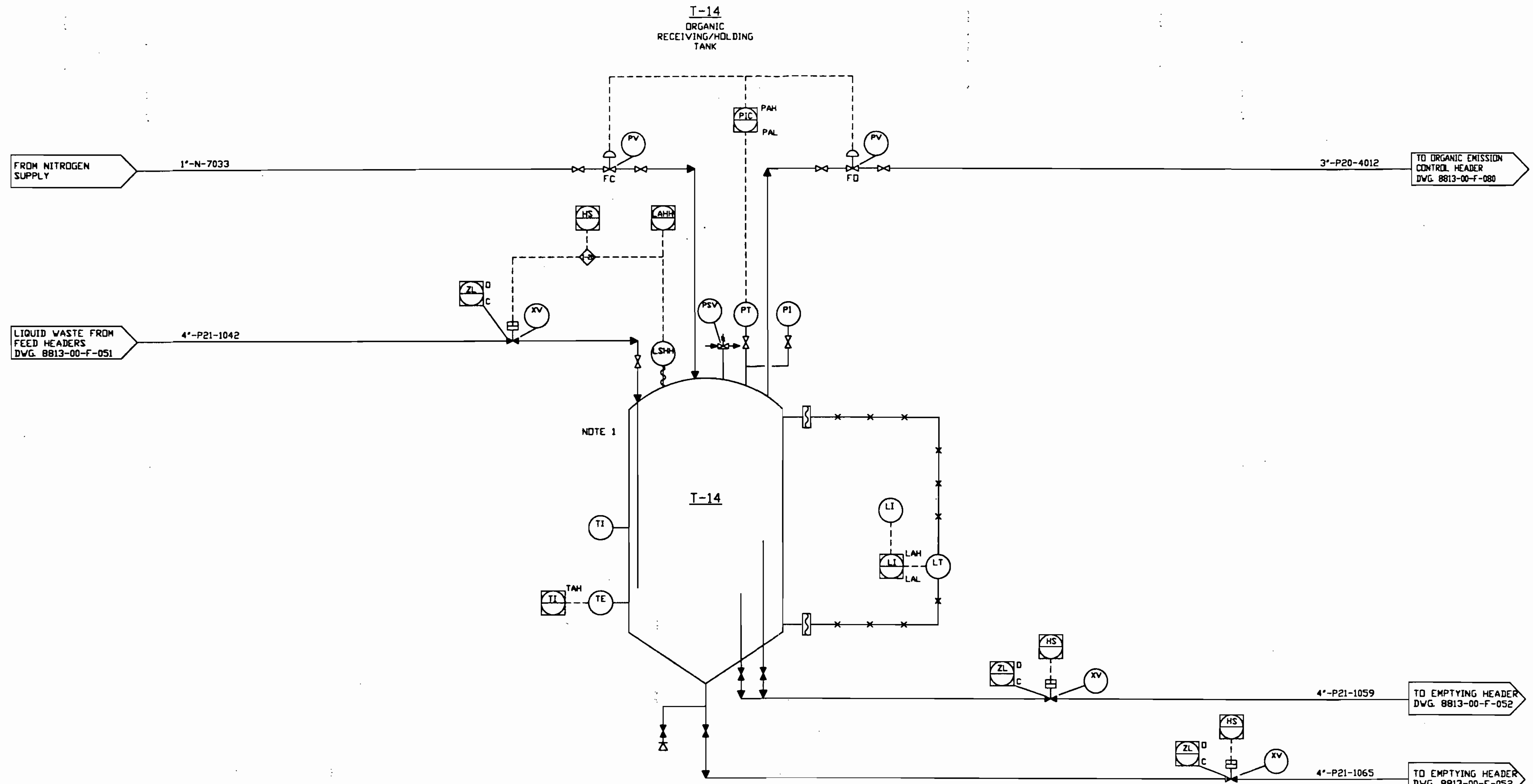
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE: P&ID ORGANIC TREATMENT ORGANIC RECEIVING/HOLDING TANK SHEET 4 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-056	E
CHKD	DATE		DATE		

E-1

8813F056



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
E	9/6/89	GENERAL REVISION	L.C.D.	
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

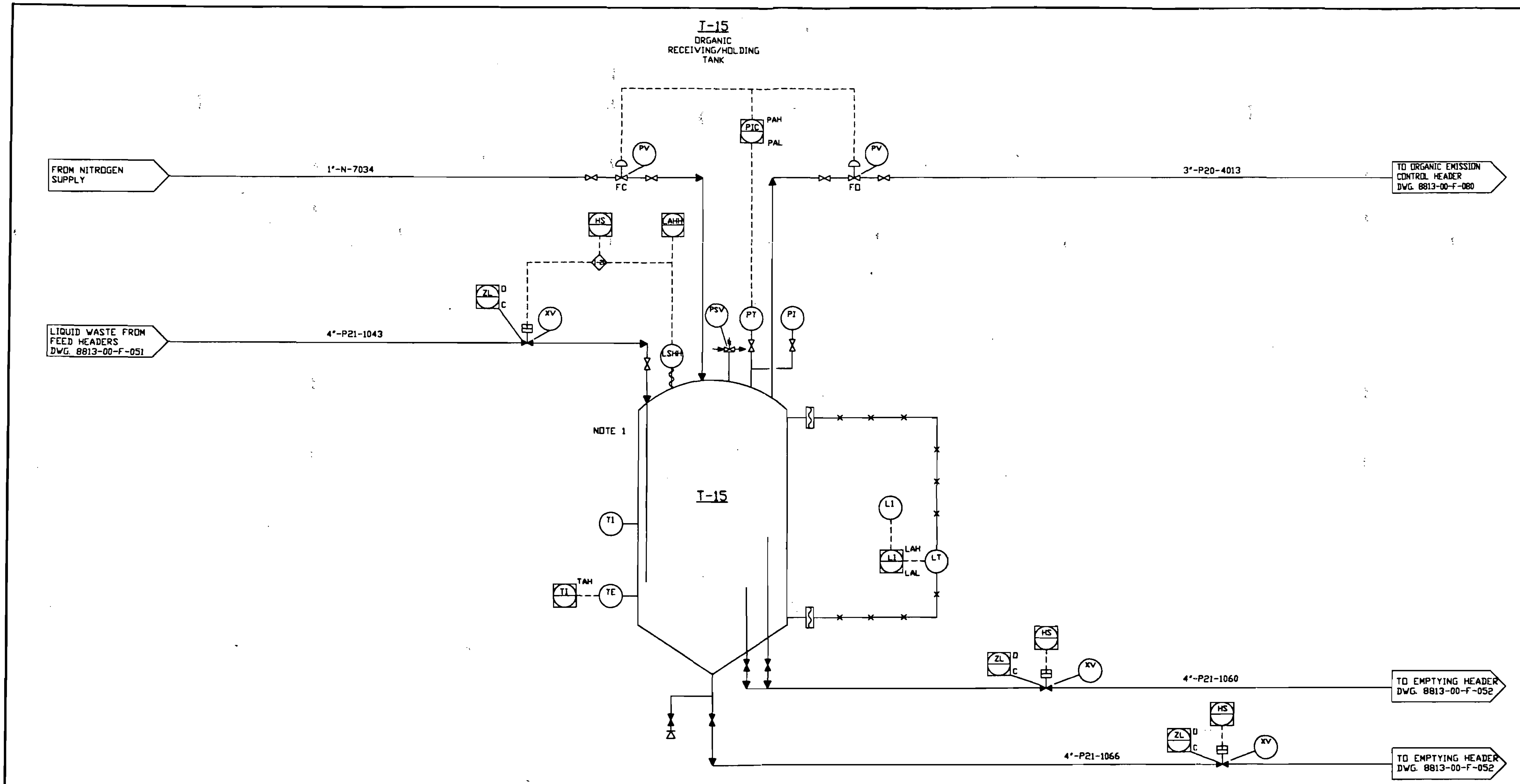
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
ORGANIC RECEIVING/HOLDING TANK
SHEET 5 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-057	E
CHKD	DATE		DATE		

8813F057

E-1



NOTE:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
E	4/8/89	GENERAL REVISION	M.K.	[illegible]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

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SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

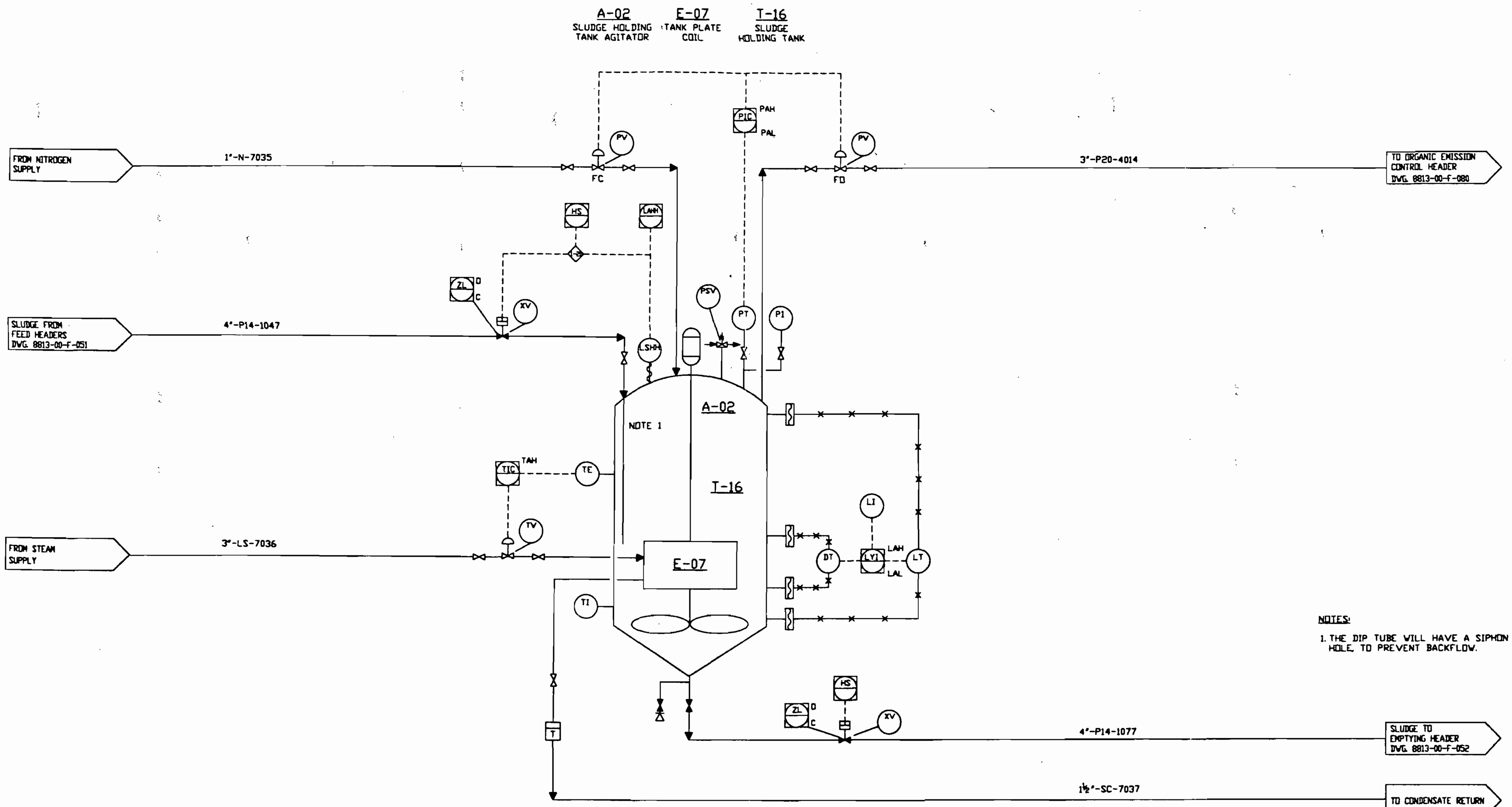
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
ORGANIC RECEIVING/HOLDING TANK
SHEET 6 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	12/23/88			8813-00-F-058	E
CHKD	DATE		DATE		

8813F058

E-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT		L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.M.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID ORGANIC TREATMENT SLUDGE HOLDING TANK

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

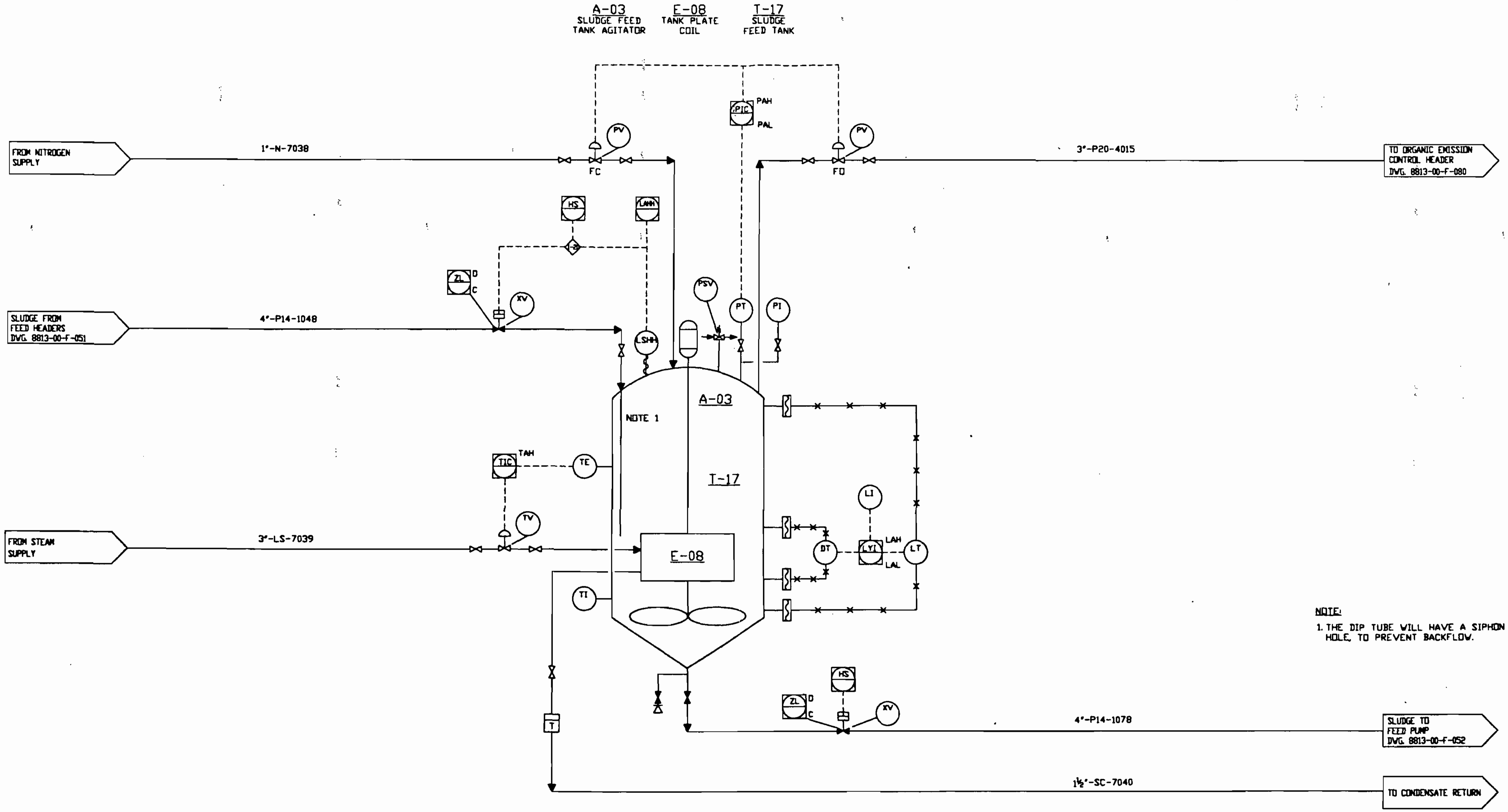
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-059	F
CHKD	DATE		DATE		

8813F059

F-1



REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	M.K.	
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT		L.D.C.
B	3/XX/89	GENERAL REVISION	R.L.M	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/8/89

SCALE: NONE

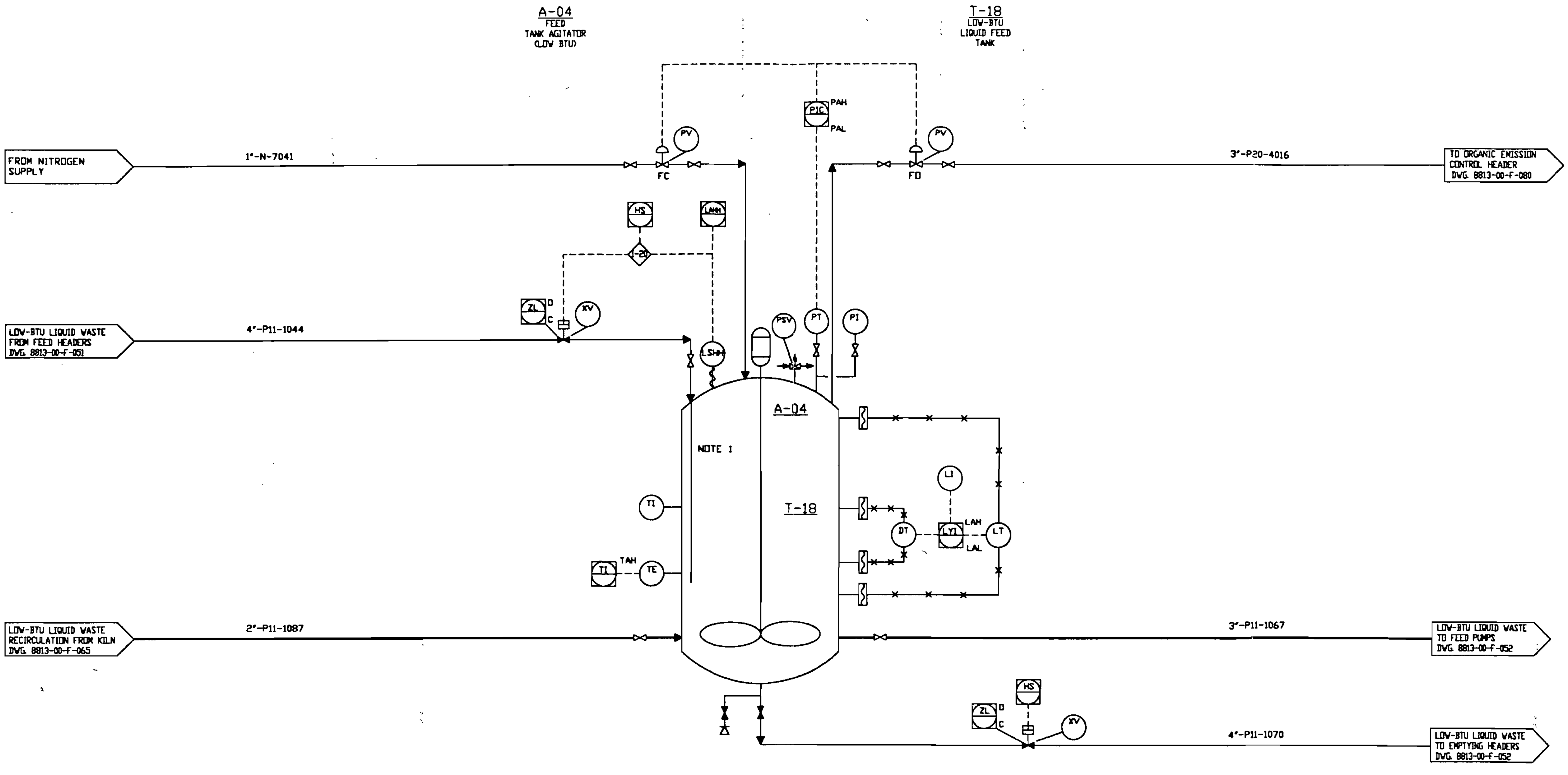
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID ORGANIC TREATMENT SLUDGE FEED TANK

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-060	E
CHKD	DATE		DATE		

8813F060

E-1



NOTE:
1. THE DIP TUBE WILL HAVE A SIPHON HOLE. TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT		L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
LOW-BTU LIQUID FEED TANK

DICK M. MILLER CERTIFICATE No. 20527 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 4/28/89

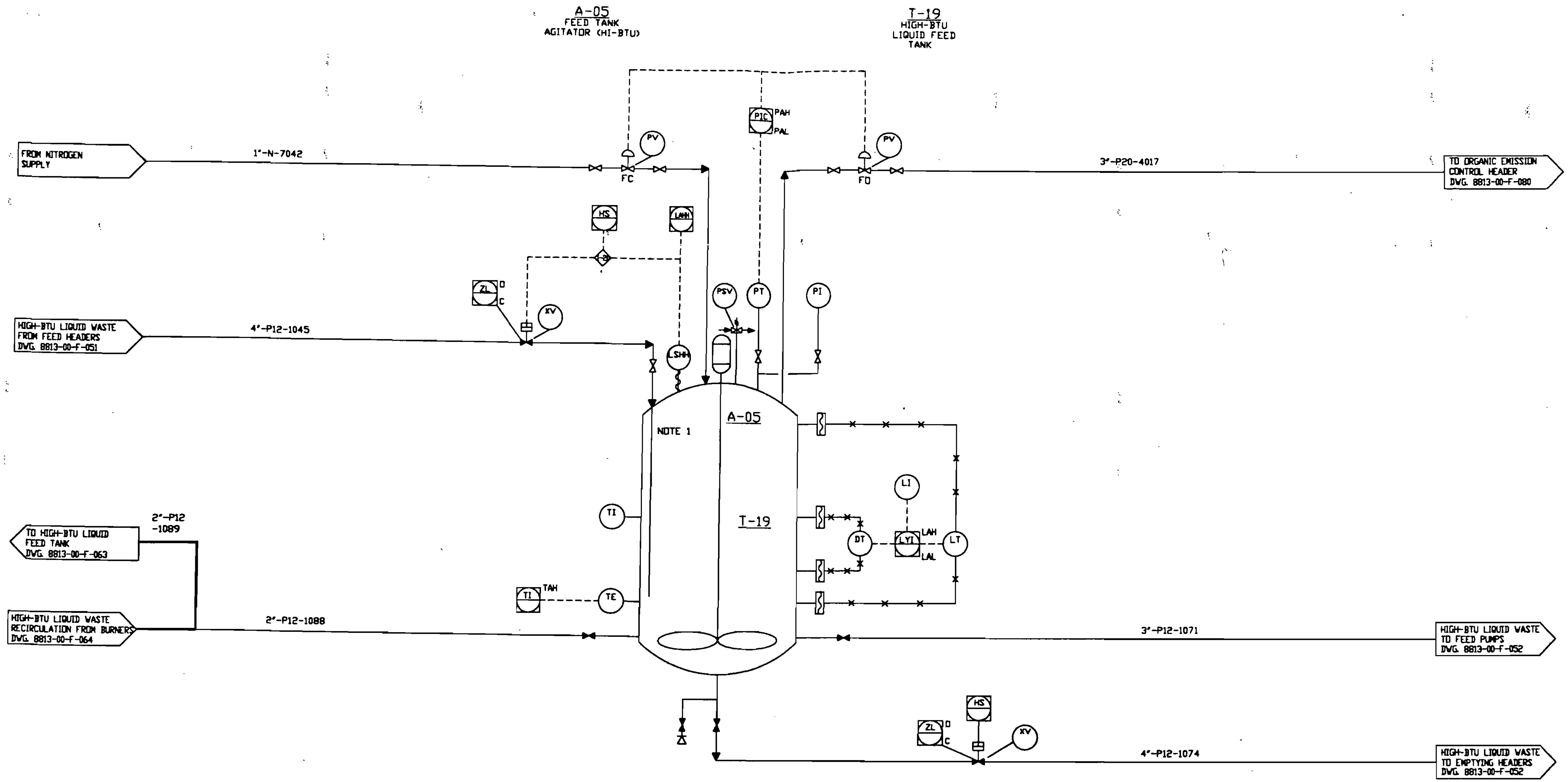
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN W.W.L.	DATE 12/27/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-061	F

8813F061

F-1



NOTE:
1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	M.K.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

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Dick M. Miller 9/15/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

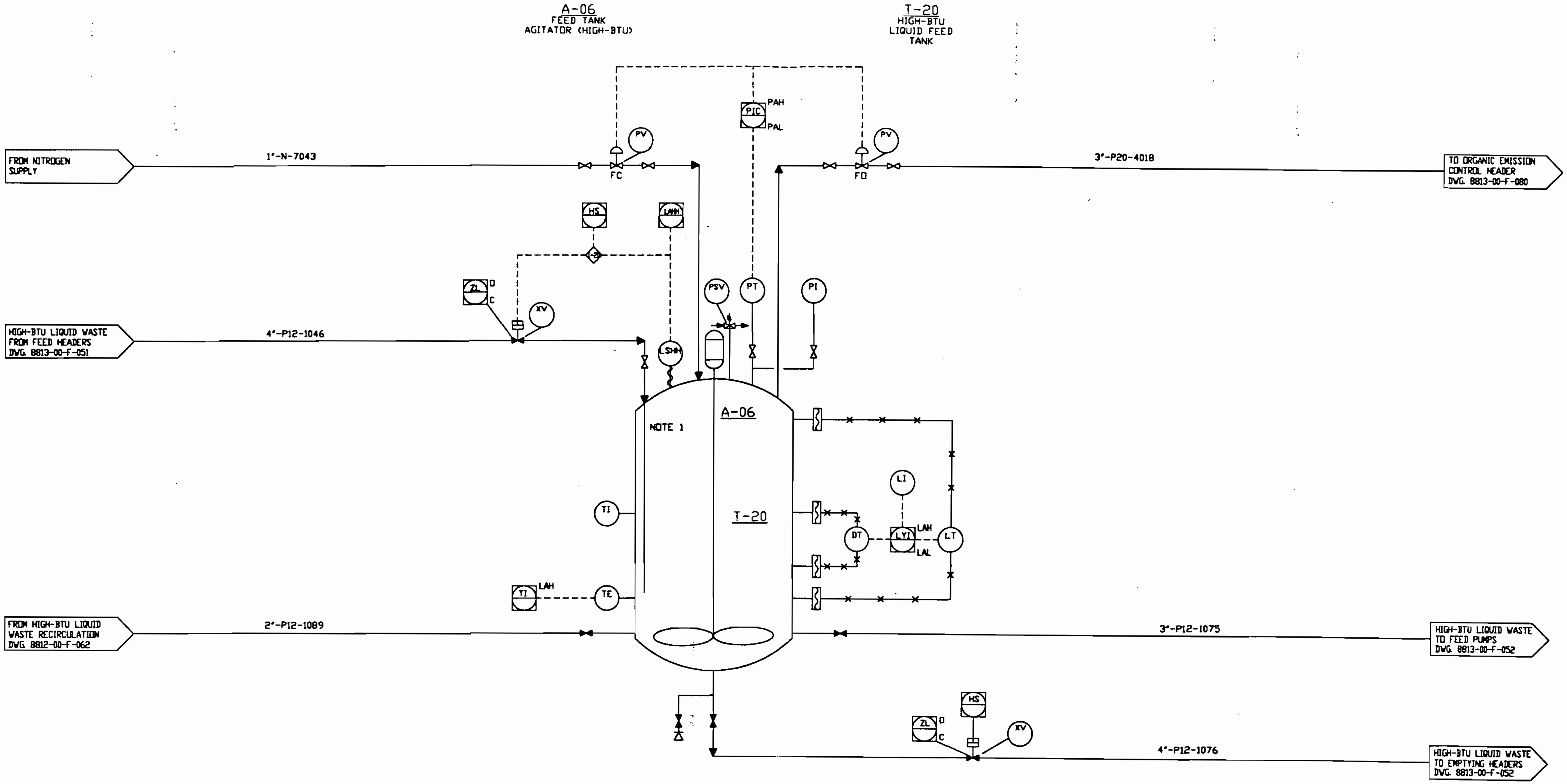
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT HIGH-BTU LIQUID FEED TANK
SHEET 1 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-062	G
CHKD	DATE		DATE		

8813F062

G-1



NOTE:
1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	RLM	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20827 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

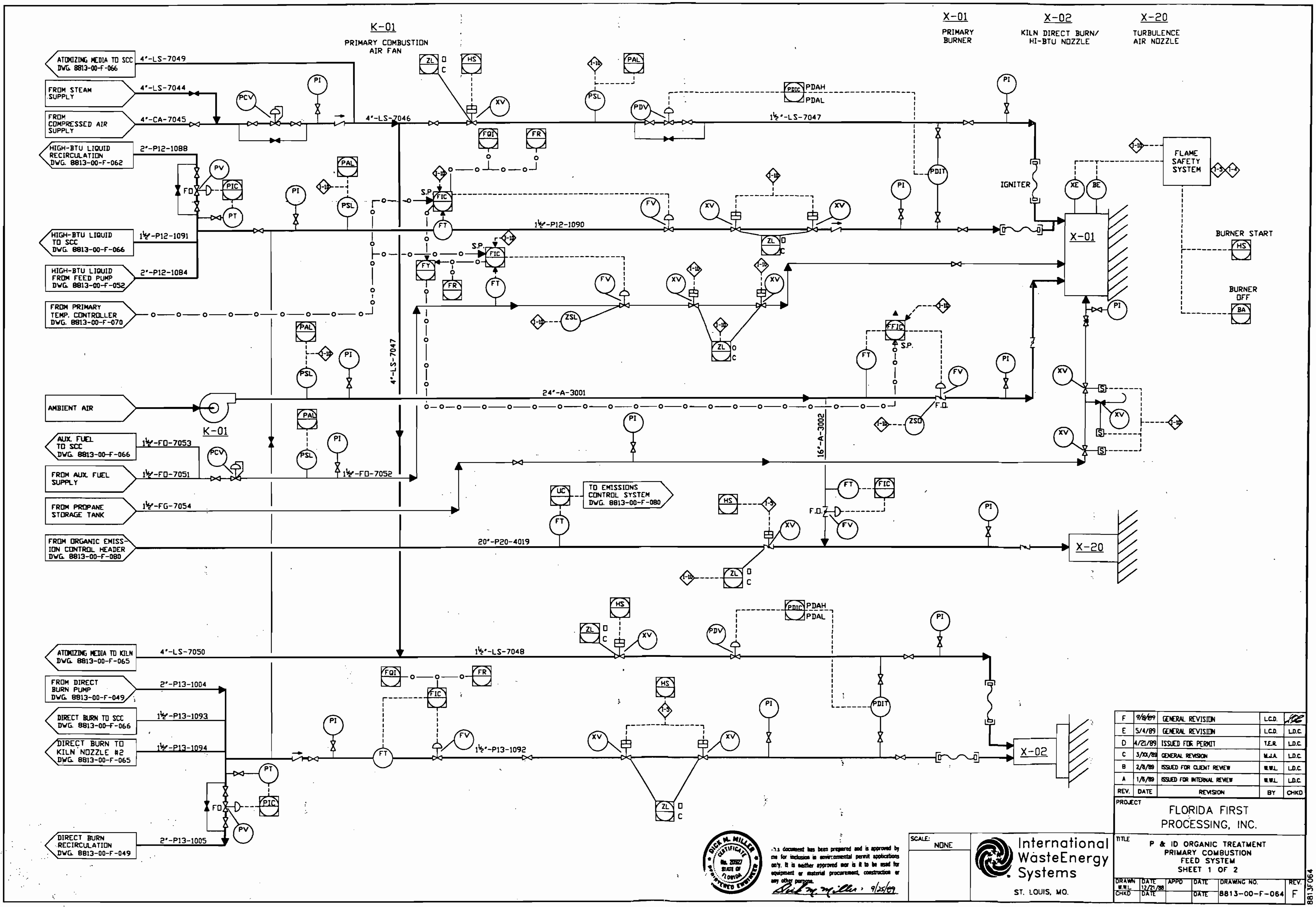
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
HIGH-BTU LIQUID FEED
TANK
SHEET 2 OF 2

DRAWN W.A.M.	DATE 12/30/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-063	F

8813F063

F-1


K-01
PRIMARY COMBUSTION AIR FAN
X-01
PRIMARY BURNER
X-02
KILN DIRECT BURN/ HI-BTU NOZZLE
X-20
TURBULENCE AIR NOZZLE
ATOMIZING MEDIA TO SCC DWG. 8813-00-F-066
4"-LS-7049
FROM STEAM SUPPLY
4"-LS-7044
FROM COMPRESSED AIR SUPPLY
4"-CA-7045
4"-LS-7046
HIGH-BTU LIQUID RECIRCULATION DWG. 8813-00-F-062
2"-P12-1088
HIGH-BTU LIQUID TO SCC DWG. 8813-00-F-066
1½"-P12-1091
HIGH-BTU LIQUID FROM FEED PUMP DWG. 8813-00-F-052
2"-P12-1084
FROM PRIMARY TEMP. CONTROLLER DWG. 8813-00-F-070
1½"-LS-7047
1½"-P12-1090
4"-LS-7047
IGNITER
FLAME SAFETY SYSTEM
BURNER START
BURNER OFF
PDAH
PDAL
S.P.
F.O.
FO
AMBIENT AIR
24"-A-3001
16"-A-3002
AUX. FUEL TO SCC DWG. 8813-00-F-066
1½"-FO-7053
FROM AUX. FUEL SUPPLY
1½"-FO-7051
1½"-FO-7052
FROM PROPANE STORAGE TANK
1½"-FG-7054
TO EMISSIONS CONTROL SYSTEM DWG. 8813-00-F-080
FROM ORGANIC EMISSION CONTROL HEADER DWG. 8813-00-F-080
20"-P20-4019
ATOMIZING MEDIA TO KILN DWG. 8813-00-F-065
4"-LS-7050
1½"-LS-7048
FROM DIRECT BURN PUMP DWG. 8813-00-F-049
2"-P13-1004
DIRECT BURN TO SCC DWG. 8813-00-F-066
1½"-P13-1093
DIRECT BURN TO KILN NOZZLE #2 DWG. 8813-00-F-065
1½"-P13-1094
1½"-P13-1092
DIRECT BURN RECIRCULATION DWG. 8813-00-F-049
2"-P13-1005
F | 9/8/89 | GENERAL REVISION | L.C.D.
E | 5/4/89 | GENERAL REVISION | L.C.D. | L.D.C.
D | 4/21/89 | ISSUED FOR PERMIT | T.E.R. | L.D.C.
C | 3/XX/89 | GENERAL REVISION | M.J.A. | L.D.C.
B | 2/8/89 | ISSUED FOR CLIENT REVIEW | W.W.L. | L.D.C.
A | 1/6/89 | ISSUED FOR INTERNAL REVIEW | W.W.L. | L.D.C.
REV. | DATE | REVISION | BY | CHKD
PROJECT
FLORIDA FIRST PROCESSING, INC.
TITLE
P & ID ORGANIC TREATMENT PRIMARY COMBUSTION FEED SYSTEM SHEET 1 OF 2
SCALE: NONE
International WasteEnergy Systems
ST. LOUIS, MO.
DRAWN W.W.L. DATE 12/21/88
CHKD DATE
APPD DATE
DRAWING NO. 8813-00-F-064
REV. F
DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER
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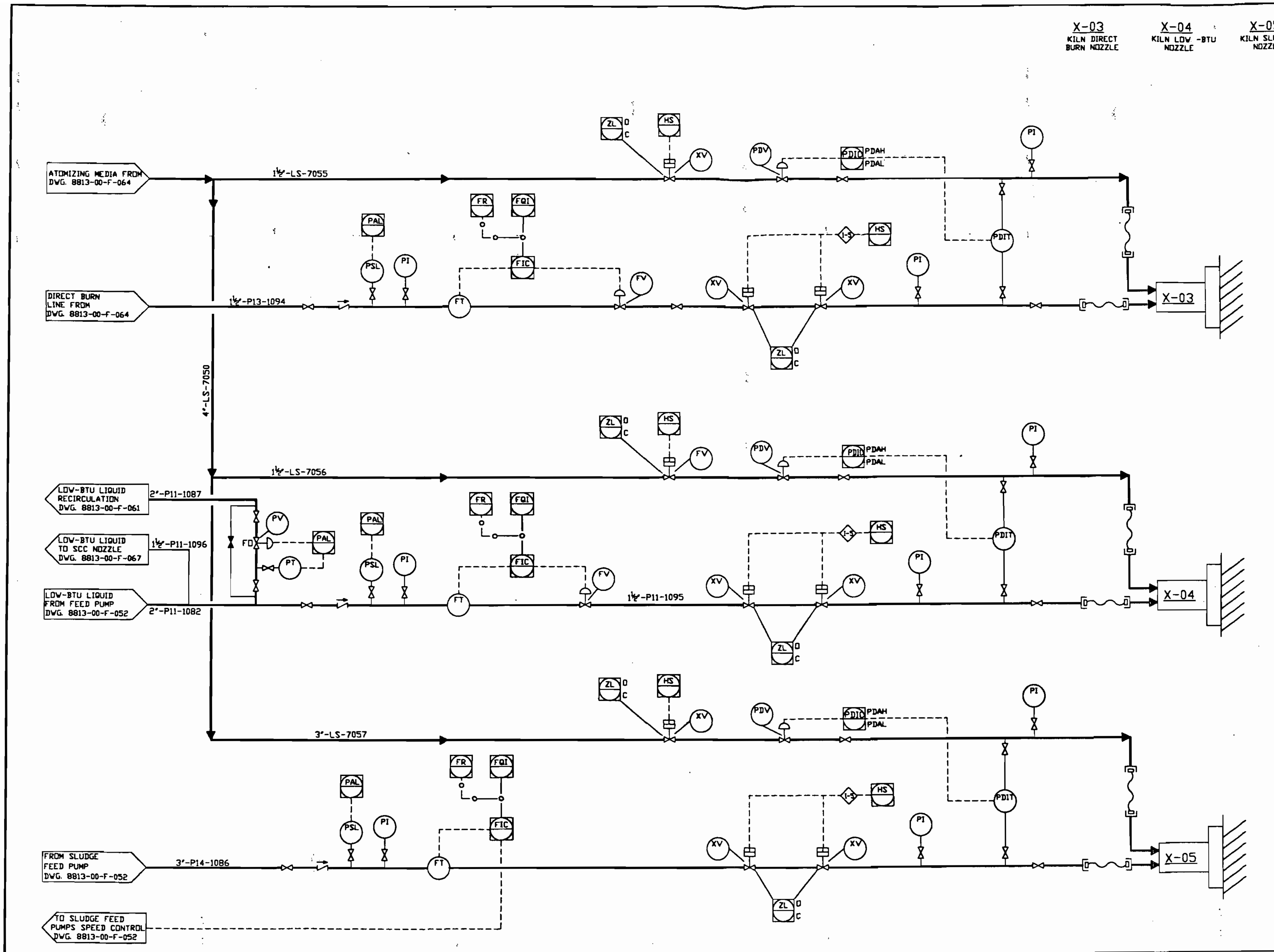
9/25/89
8813F064
F-3



REV.	DATE	REVISION	BY	CHKD
E	9/6/89	GENERAL REVISION	L.C.D.	[illegible]
D	4/21/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
C	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/5/89

SCALE: NONE

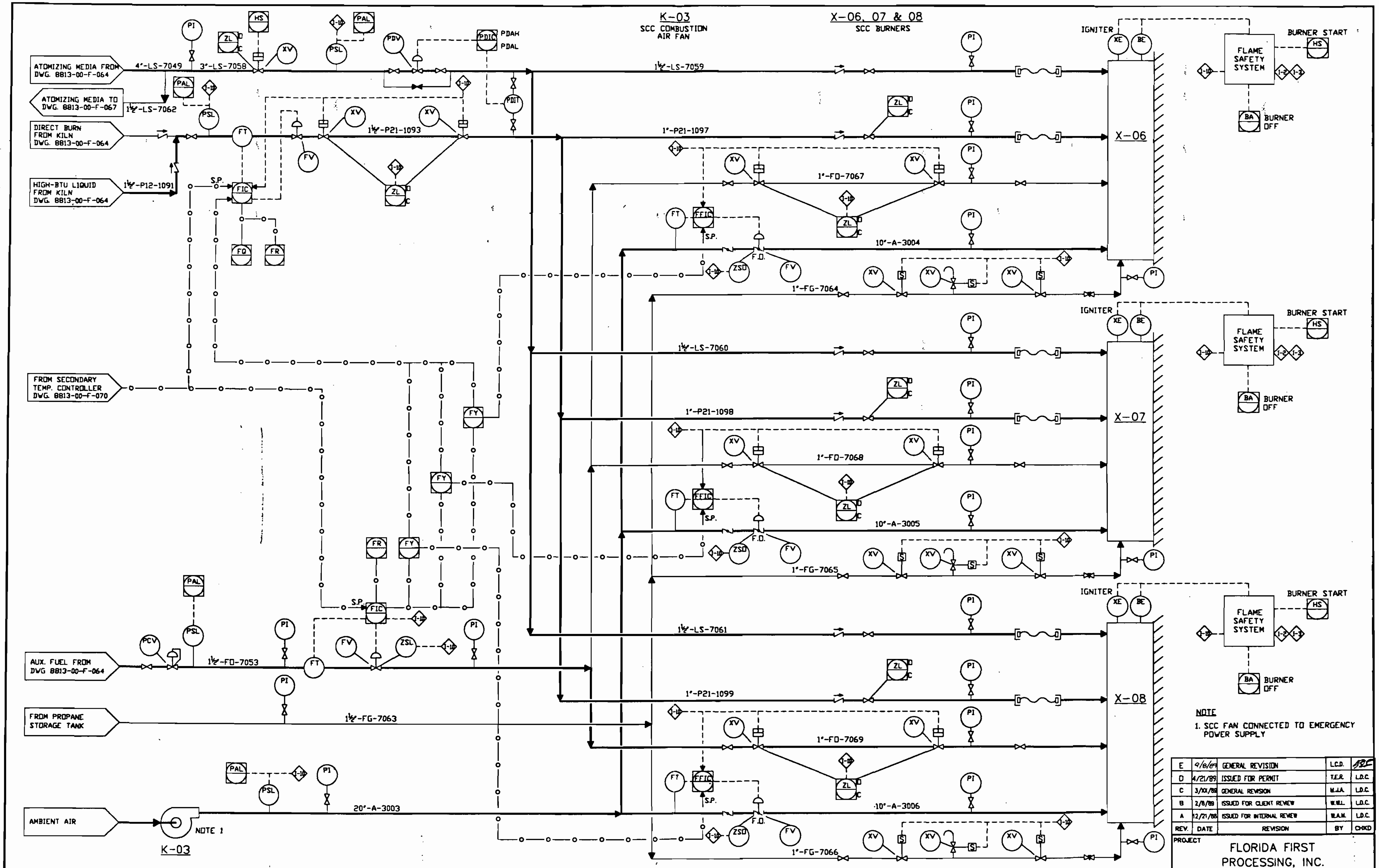
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID ORGANIC TREATMENT PRIMARY COMBUSTION FEED SYSTEM SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/21/88			8813-00-F-065	E
CHKD	DATE		DATE		

8813F065

E-1



NOTE

1. SCC FAN CONNECTED TO EMERGENCY POWER SUPPLY

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	
D	4/21/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
C	3/10/89	GENERAL REVISION	M.J.A.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.M.L.	L.D.C.
A	12/21/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

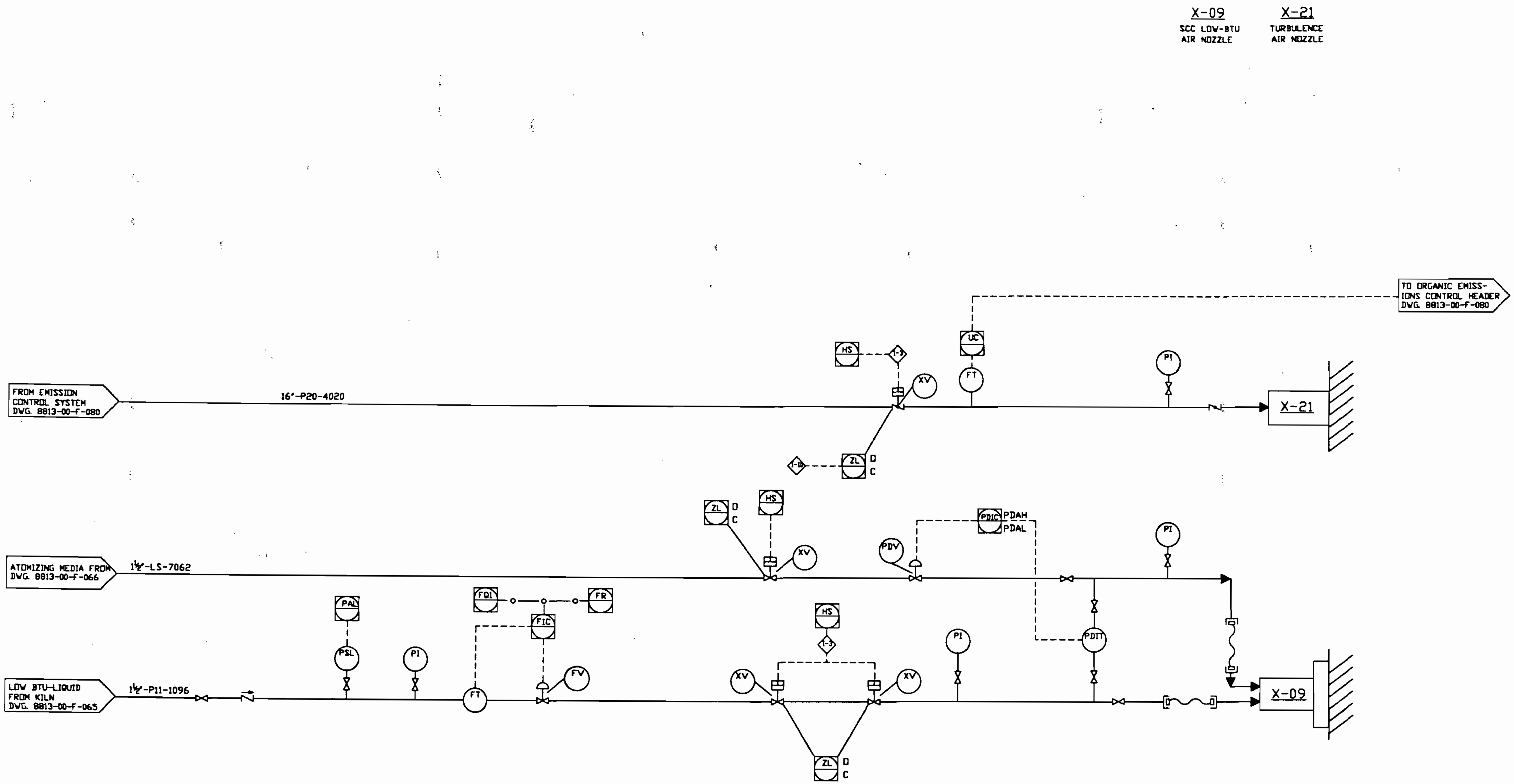
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
SECONDARY COMBUSTION CHAMBER
FEED SYSTEM
SHEET 1 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/21/88			8813-00-F-066	E
CHKD	DATE		DATE		

8813F066

E-2



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	3/22/89	GENERAL REVISION	M.J.A.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	12/21/88	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
SECONDARY COMBUSTION CHAMBER
FEED SYSTEM
SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/21/88			8813-00-F-067	F
CHKD	DATE		DATE		

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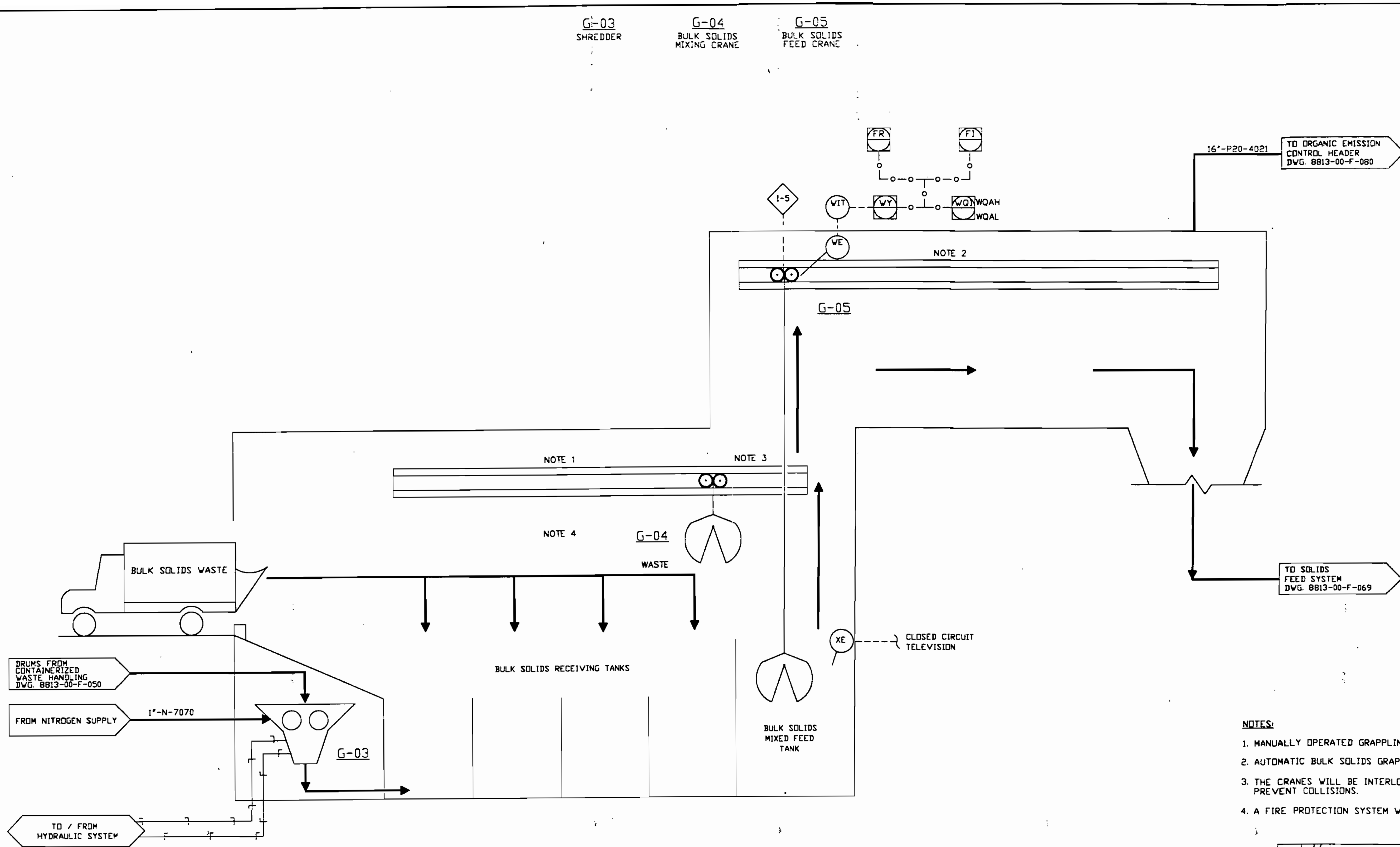
9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

8813F067
F-1



NOTES:

1. MANUALLY OPERATED GRAPPLING CRANE.
2. AUTOMATIC BULK SOLIDS GRAPPLING CRANE.
3. THE CRANES WILL BE INTERLOCKED TO PREVENT COLLISIONS.
4. A FIRE PROTECTION SYSTEM WILL BE INSTALLED.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT		L.D.C.
C	3/XX/89	GENERAL REVISION		L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/06/89	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

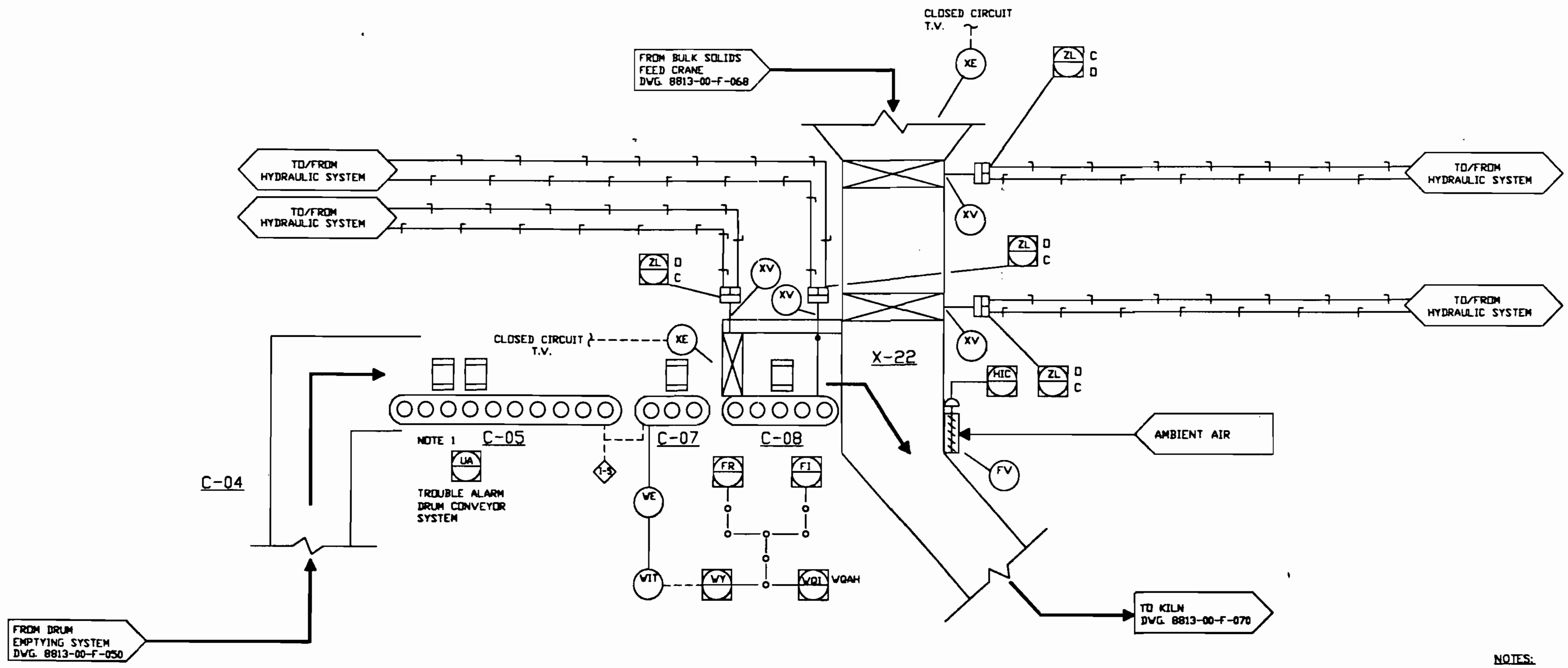
TITLE
P&ID ORGANIC TREATMENT
BULK SOLIDS
UNLOADING & HANDLING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/21/88			8813-00-F-068	F
CHKD	DATE		DATE		

8813F068

F-2

C-04	C-05	C-07	C-08	X-22
DRUM ELEVATOR	DRUMMED SOLIDS FEED CONVEYOR	DRUM WEIGHING CONVEYOR	KILN DRUM FEED CONVEYOR	KILN SOLIDS FEED CHUTE



NOTES:

1. THE DRUM CONVEYORS HAVE MANUAL TRIP WIRES.
2. AIRLOCKS FOR DRUMMED AND BULK SOLIDS FEEDING WILL BE INTERLOCKED TO PREVENT SIMULTANEOUS FEEDING

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	[illegible]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/06/89	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID ORGANIC TREATMENT SOLIDS FEED SYSTEM

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

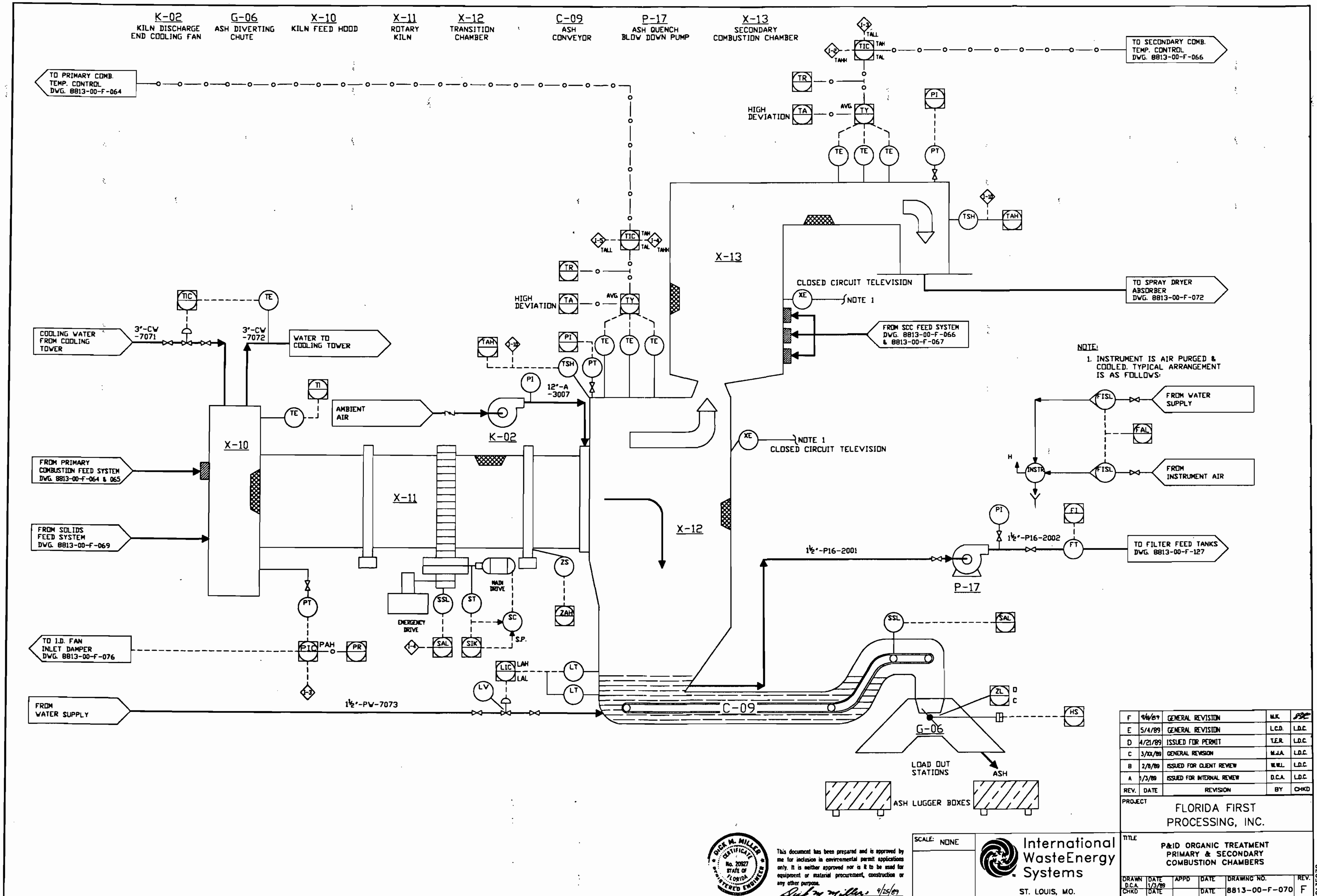
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/21/88			8813-00-F-069	F
CHKD	DATE		DATE		

8813F069

F-1



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	[illegible]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	ISSUED FOR PERMIT	T.E.R.	L.D.C.
C	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/3/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID ORGANIC TREATMENT PRIMARY & SECONDARY COMBUSTION CHAMBERS

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN D.C.A. DATE 1/3/89 | APPD | DATE | DRAWING NO. 8813-00-F-070 | REV. F
CHKD | DATE | DATE

DICK M. MILLER, CERTIFICATE No. 20927, STATE OF FLORIDA, REGISTERED ENGINEER

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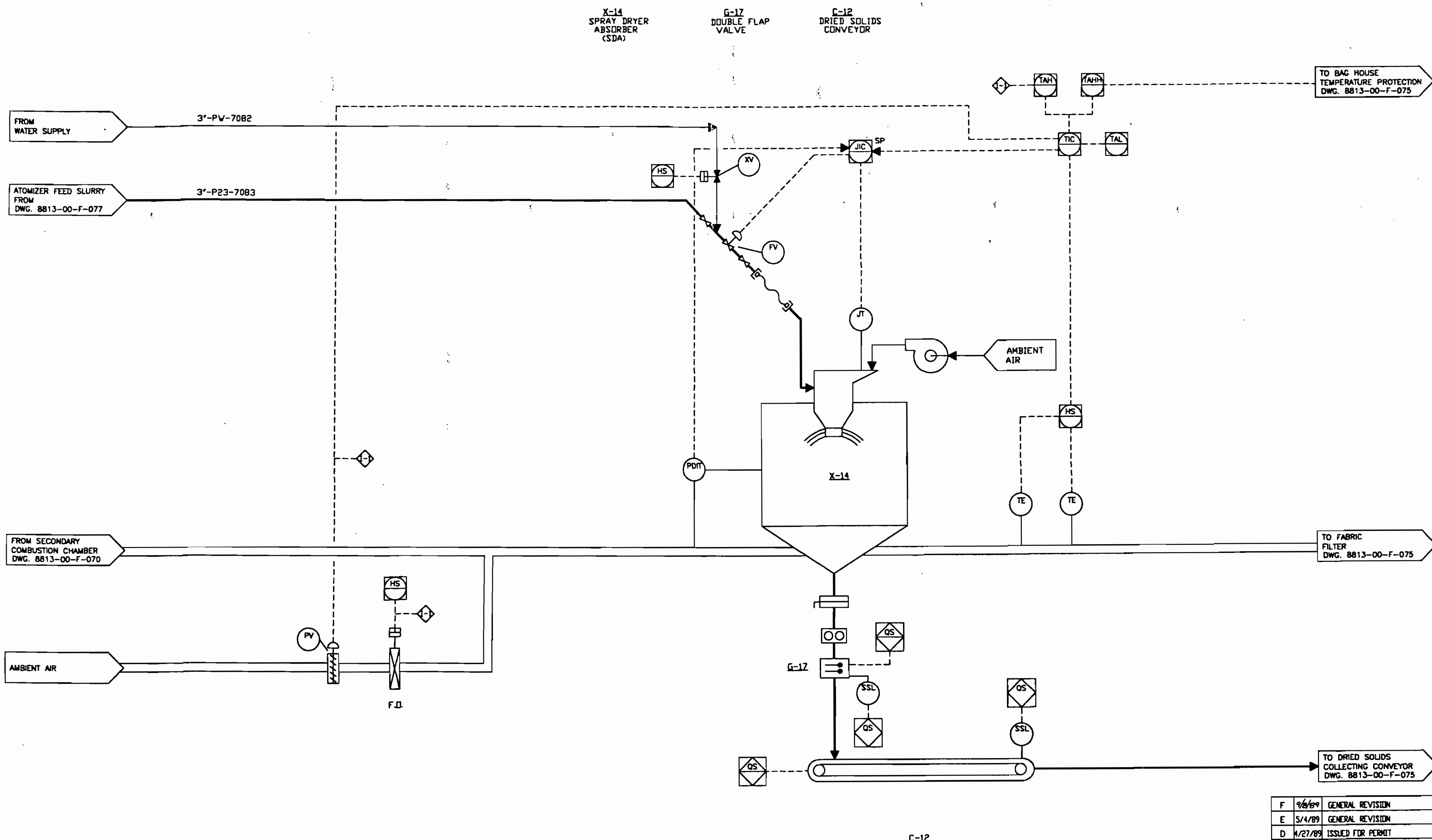
Dick M. Miller 4/25/89

8813F070

F-2



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	M.K.	[illegible]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	TER	L.D.C.
C	4/21/89	GENERAL REVISION	TER	L.D.C.
B	3/16/89	ISSUED FOR CLIENT REVIEW	RLM	L.D.C.
A	2/17/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

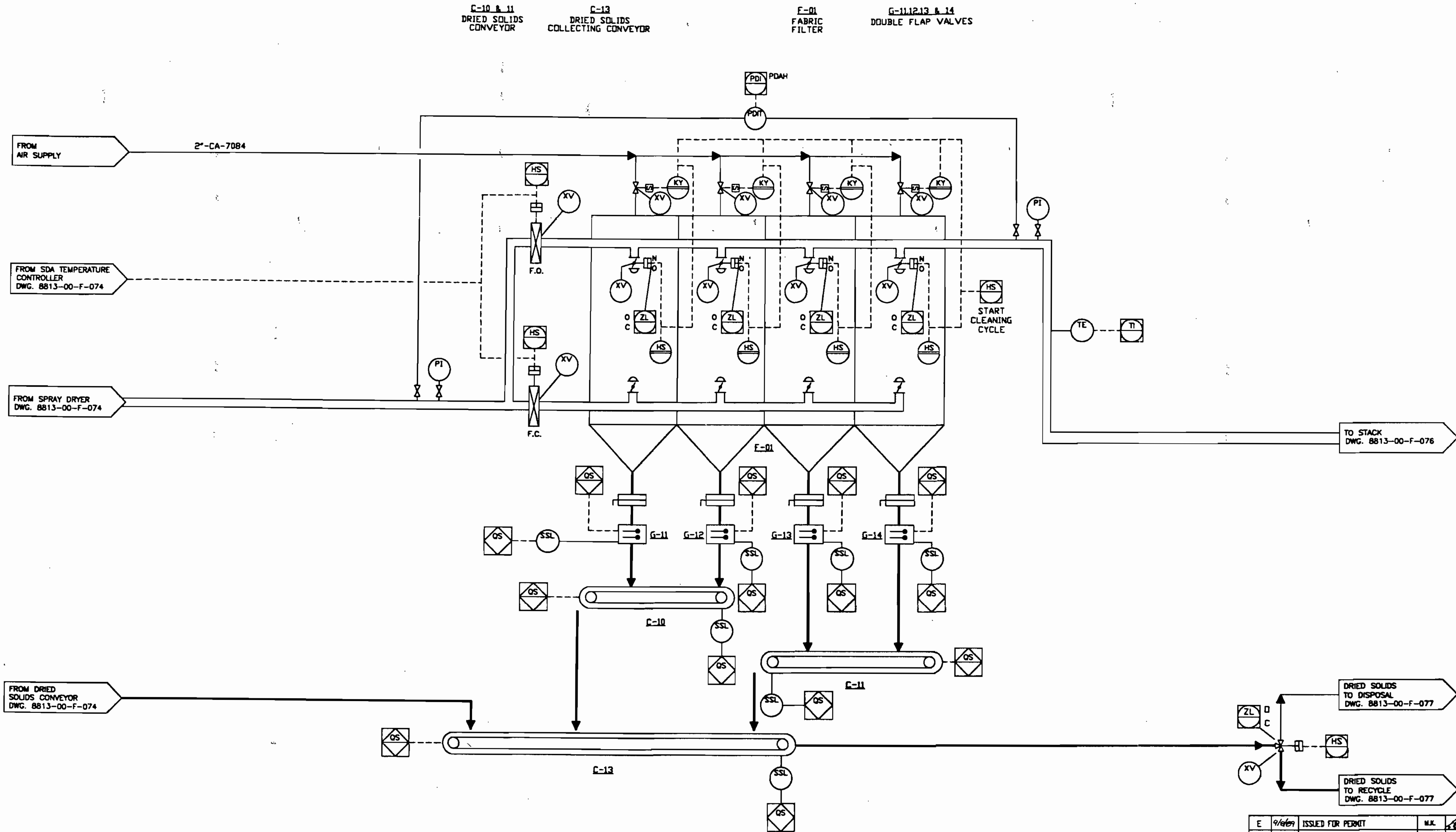
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT
SDA

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	2/16/89			8813-00-F-074	F
CHKD	DATE		DATE		

8813F074

F-3



REV.	DATE	REVISION	BY	CHKD
E	9/8/89	ISSUED FOR PERMIT	M.K.	
D	4/27/89	ISSUED FOR PERMIT	TER	L.D.C.
C	4/21/89	GENERAL REVISION	TER	L.D.C.
B	3/17/89	ISSUED FOR CLIENT REVIEW	RLM	L.D.C.
A	2/17/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20527 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

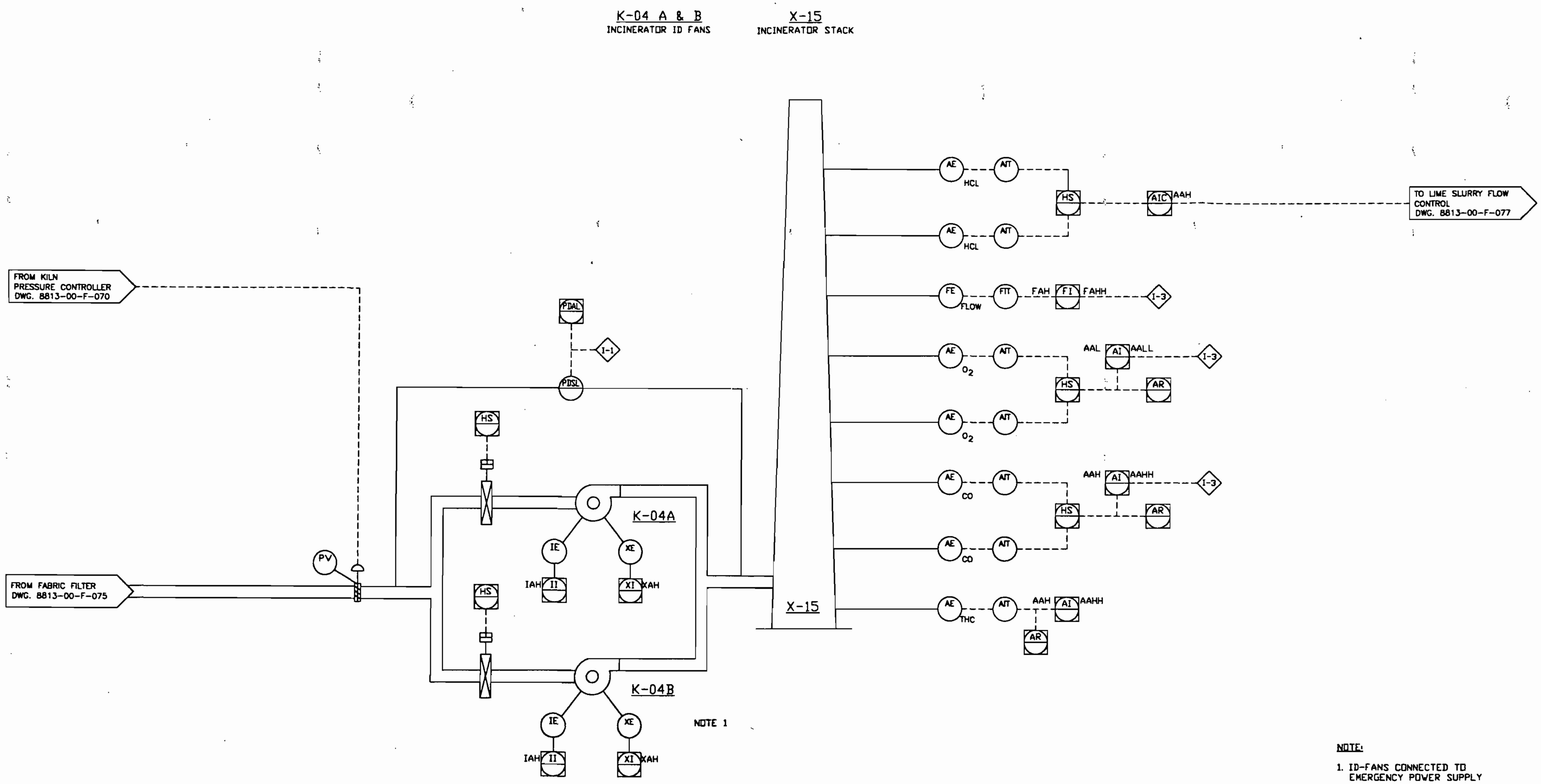
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT FABRIC FILTER

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	2/16/89			8813-00-F-075	E
CHKD	DATE		DATE		

8813F075

E-1



NOTE:

1. ID-FANS CONNECTED TO EMERGENCY POWER SUPPLY

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/16/89	GENERAL REVISION	RLM	L.D.C.
A	2/17/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT INCINERATOR ID FAN & STACK

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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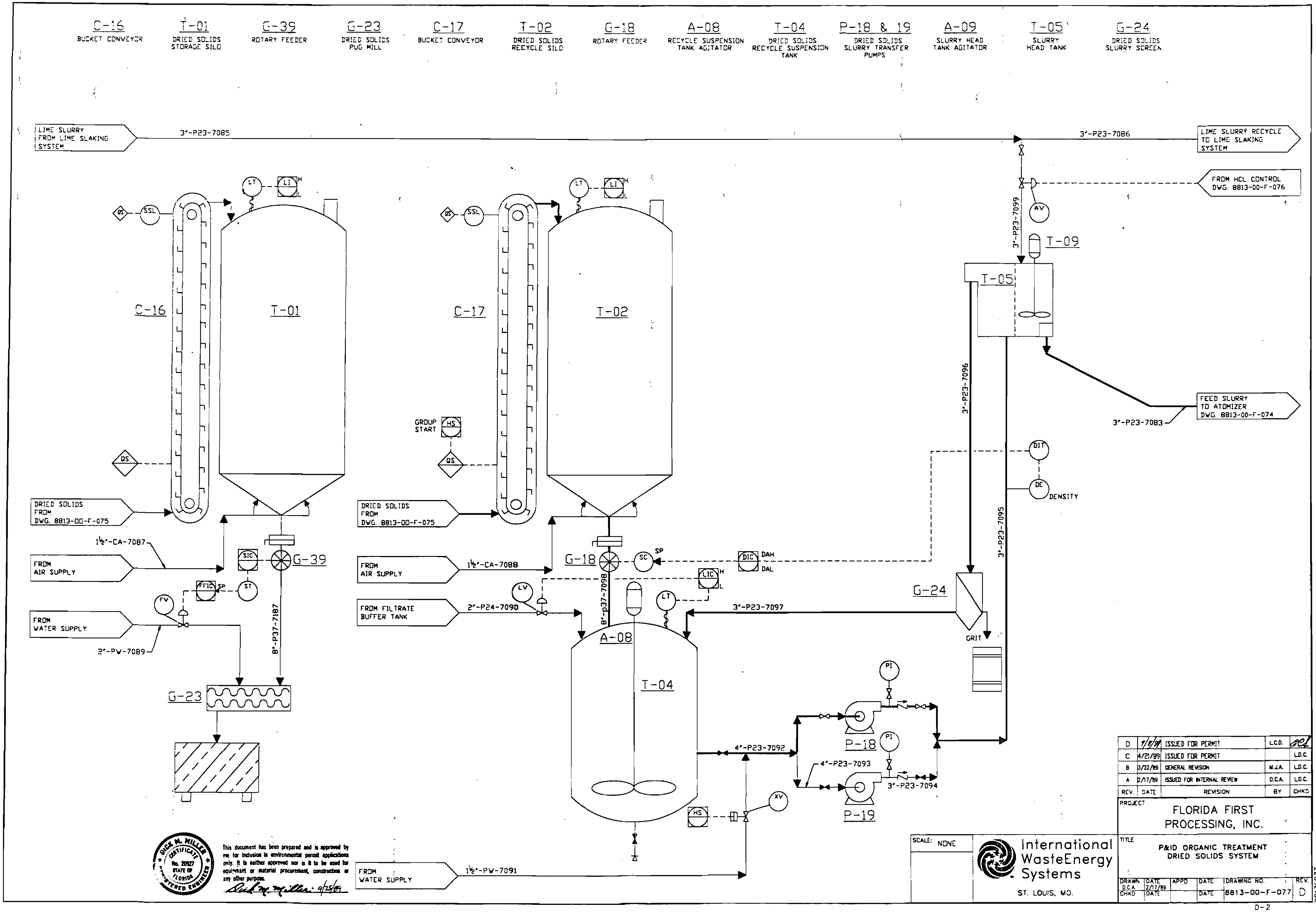
International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	2/16/89			8813-00-F-076	E
CHKD	DATE		DATE		

E-3

8813F076


C-16
BUCKET CONVEYOR
T-01
DRIED SOLIDS STORAGE SILO
G-39
ROTARY FEEDER
G-23
DRIED SOLIDS PUG MILL
C-17
BUCKET CONVEYOR
T-02
DRIED SOLIDS RECYCLE SILO
G-18
ROTARY FEEDER
A-08
RECYCLE SUSPENSION TANK AGITATOR
T-04
DRIED SOLIDS RECYCLE SUSPENSION TANK
P-18 & 19
DRIED SOLIDS SLURRY TRANSFER PUMPS
A-09
SLURRY HEAD TANK AGITATOR
T-05
SLURRY HEAD TANK
G-24
DRIED SOLIDS SLURRY SCREEN
LIME SLURRY FROM LIME SLAKING SYSTEM
3"-P23-7085
3"-P23-7086
LIME SLURRY RECYCLE TO LIME SLAKING SYSTEM
FROM HCL CONTROL DWG. 8813-00-F-076
AV
3"-P23-7099
T-09
T-05
3"-P23-7096
FEED SLURRY TO ATOMIZER DWG. 8813-00-F-074
3"-P23-7083
DIT
DE
DENSITY
3"-P23-7095
GROUP START
HS
QS
SSL
LT
LI
DRIED SOLIDS FROM DWG. 8813-00-F-075
1½"-CA-7087
FROM AIR SUPPLY
SIC
ST
FFIC
SP
FV
FROM WATER SUPPLY
2"-PW-7089
8"-P37-7187
G-23
FROM AIR SUPPLY
1½"-CA-7088
FROM FILTRATE BUFFER TANK
2"-P24-7090
LV
8"-P37-7098
SC
SP
DIC
DAH
DAL
LIC
3"-P23-7097
G-24
GRIT
4"-P23-7092
4"-P23-7093
3"-P23-7094
P-18
P-19
PI
XV
HS
FROM WATER SUPPLY
1½"-PW-7091
DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER
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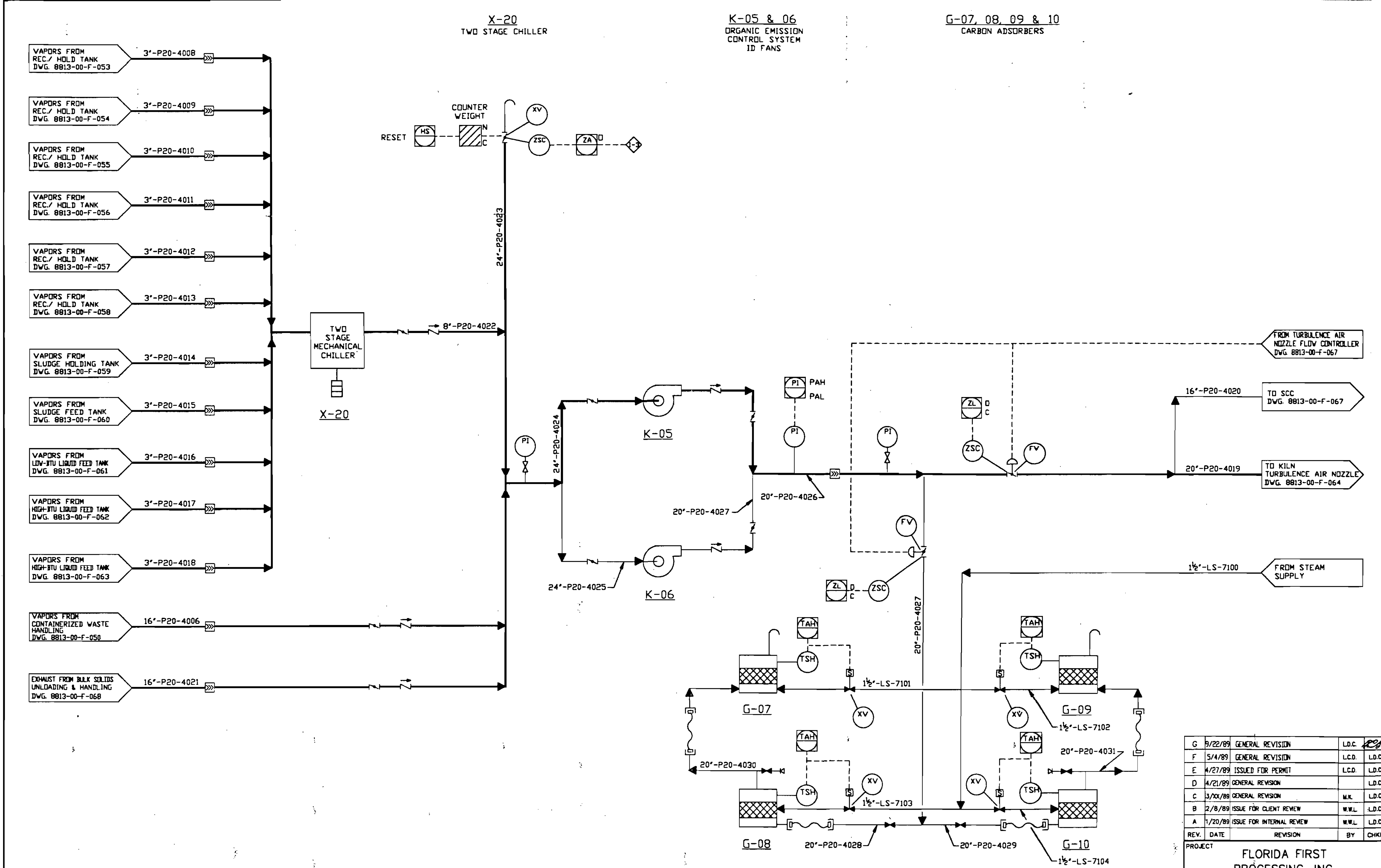
9/25/89
SCALE: NONE
International WasteEnergy Systems
ST. LOUIS, MO.
D 9/8/89 ISSUED FOR PERMIT L.C.D.
C 4/21/89 ISSUED FOR PERMIT L.D.C.
B 3/22/89 GENERAL REVISION M.J.A. L.D.C.
A 2/17/89 ISSUED FOR INTERNAL REVIEW D.C.A. L.D.C.
REV. DATE REVISION BY CHKD
PROJECT
FLORIDA FIRST PROCESSING, INC.
TITLE
P&ID ORGANIC TREATMENT DRIED SOLIDS SYSTEM
DRAWN D.C.A. DATE 2/17/89 APPD DATE DRAWING NO. 8813-00-F-077 REV. D
CHKD DATE DATE
D-2
8813F077



REV.	DATE	REVISION	BY	CHKD
G	9/22/89	GENERAL REVISION	L.D.C.	[signature]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION		L.D.C.
C	3/XX/89	GENERAL REVISION	M.K.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/20/89	ISSUE FOR INTERNAL REVIEW	W.W.L.	L.D.C.

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[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

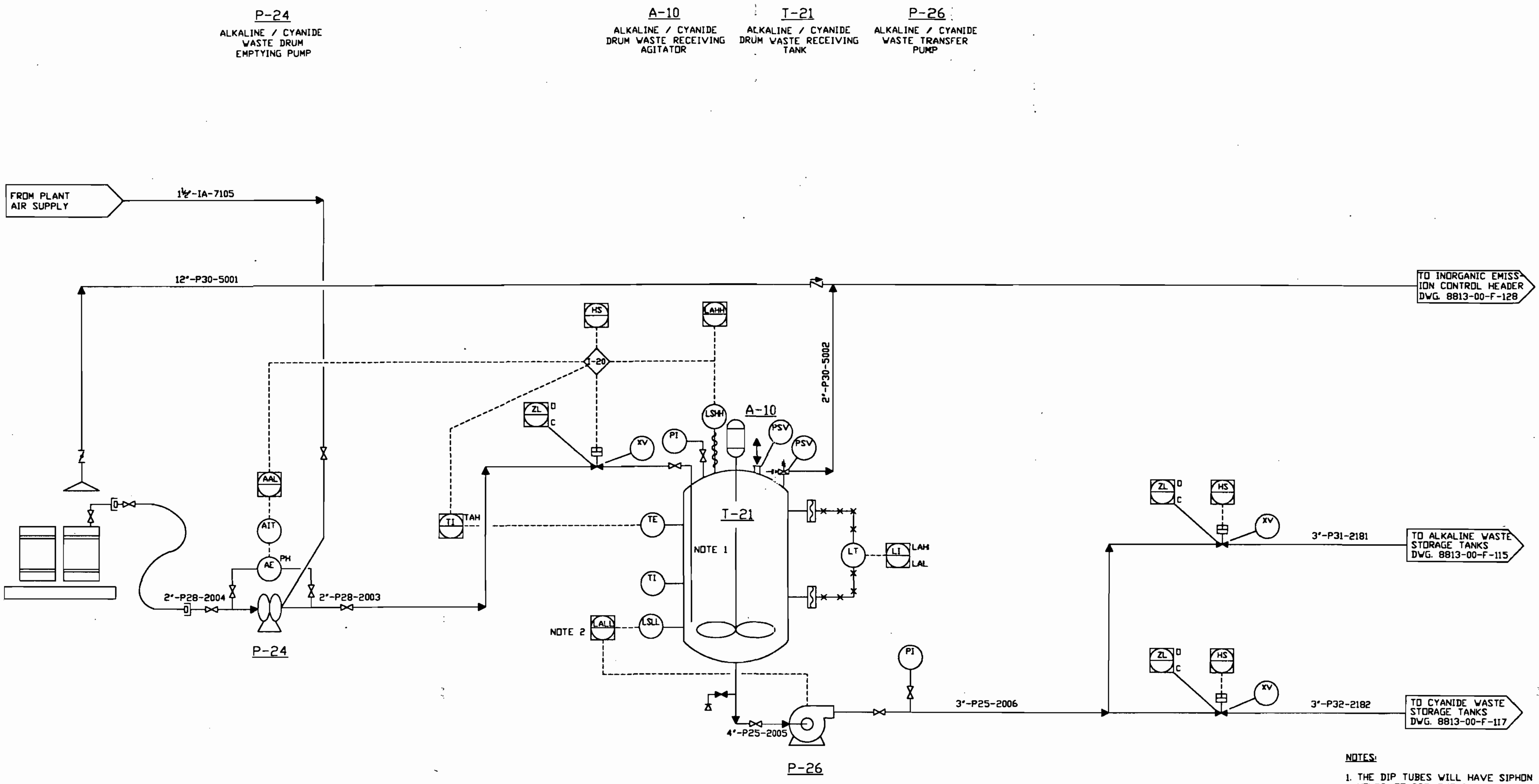
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID ORGANIC TREATMENT EMISSION CONTROL SYSTEM

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RWH	1/19/89			8813-00-F-080	G
CHKD	DATE		DATE		

DATE PLOTTED: 9/22/89

8813F080



NOTES:

1. THE DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
2. A LOW LOW LEVEL ALARM AUTOMATICALLY STOPS THE PUMP.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	[signature]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
A	3/10/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT ALKALINE/CYANIDE CONTAINERIZED WASTE HANDLING

SHEET 1 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
MJA	3/9/89			8813-00-F-098	E
CHKD	DATE		DATE		

8813F098

E-2

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

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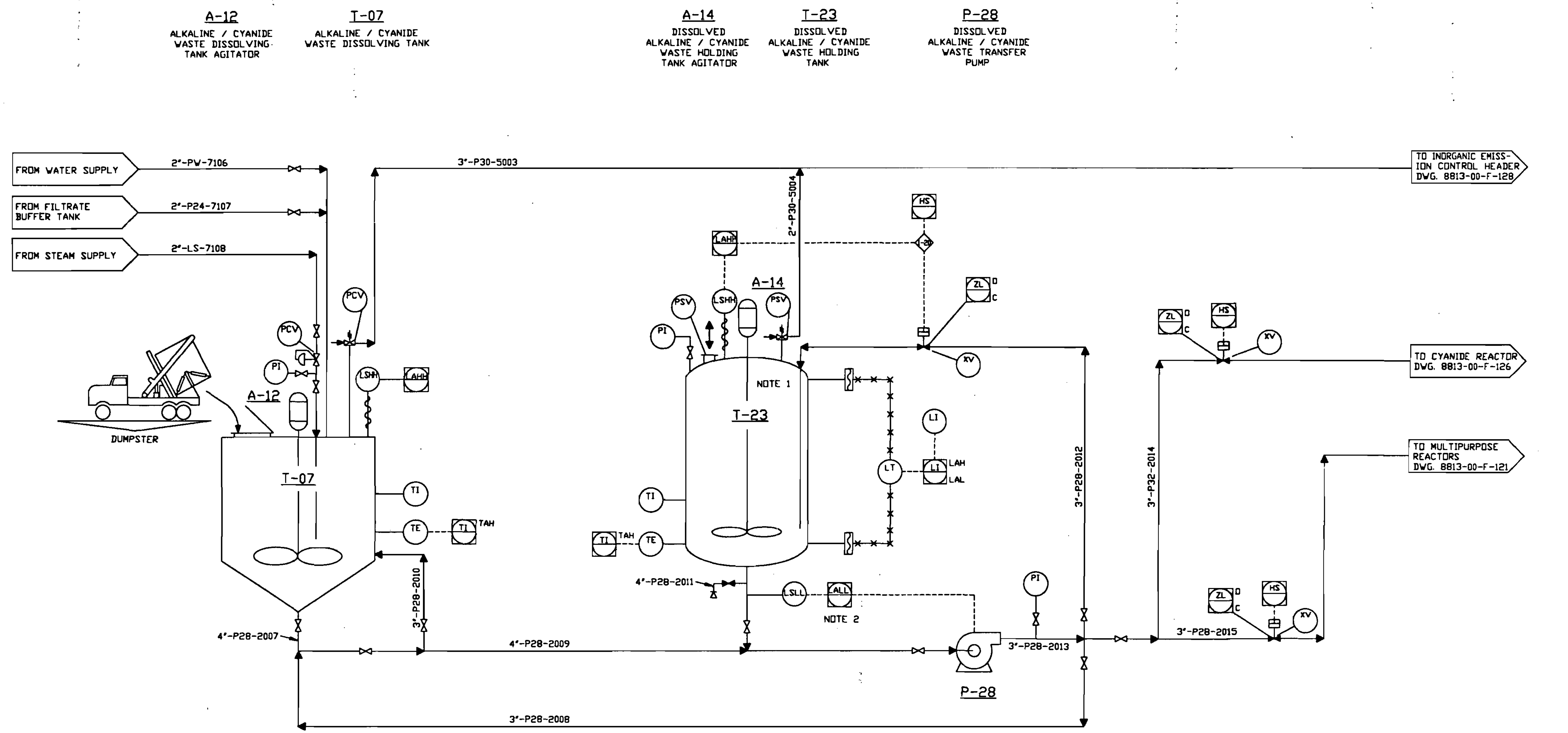
[signature] 9/25/89



NOTES:

1. THE DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
2. A LOW LOW LEVEL ALARM AUTOMATICALLY STOPS THE PUMP.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
A	3/10/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

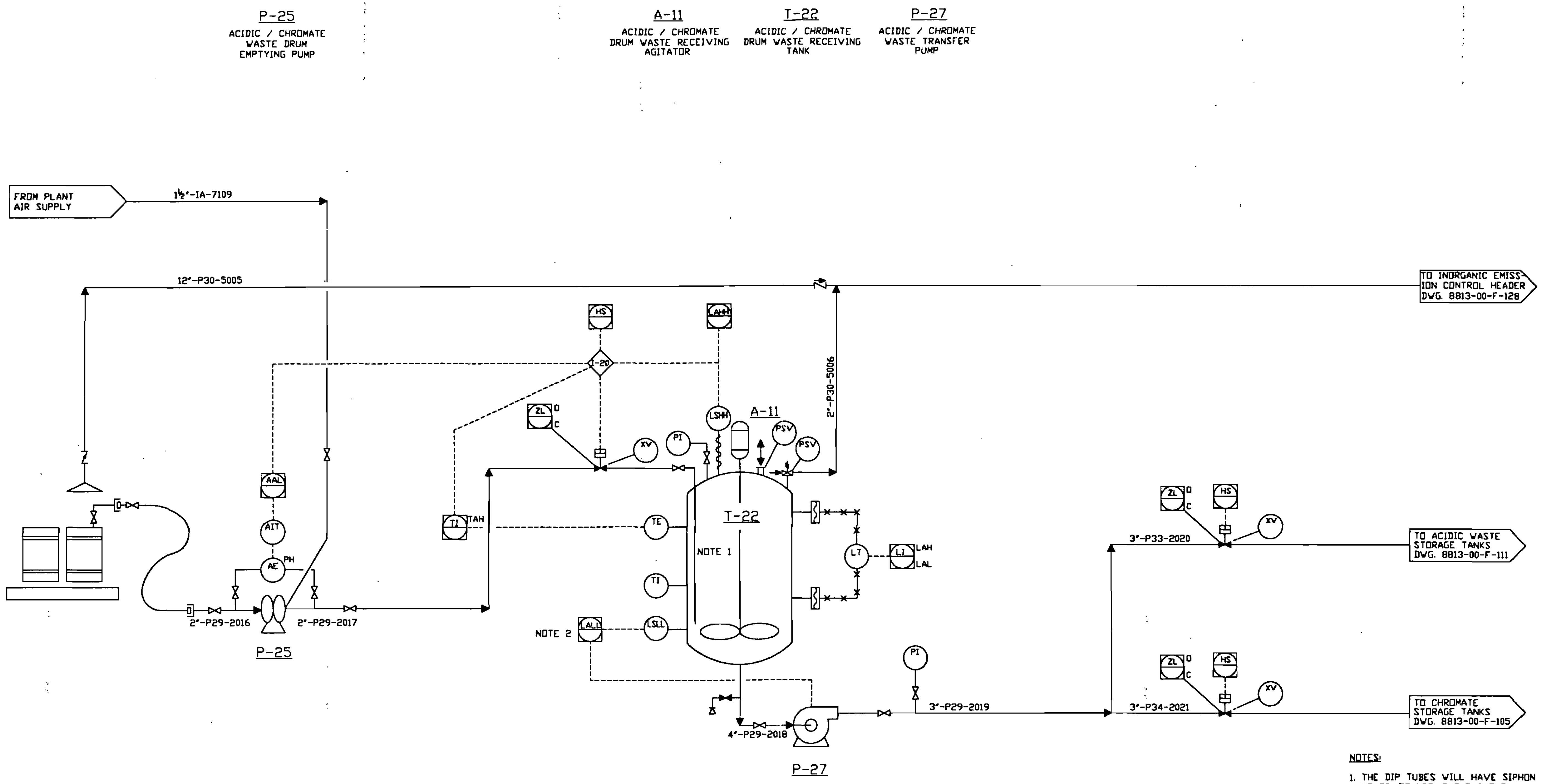
TITLE: P&ID INORGANIC TREATMENT ALKALINE/CYANIDE CONTAINERIZED WASTE HANDLING

SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
MJA	3/9/89			8813-00-F-099	E
CHKD	DATE		DATE		

8813F099

E-1



NOTES:

1. THE DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
2. A LOW LOW LEVEL ALARM AUTOMATICALLY STOPS THE PUMP.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
D	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
A	3/10/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

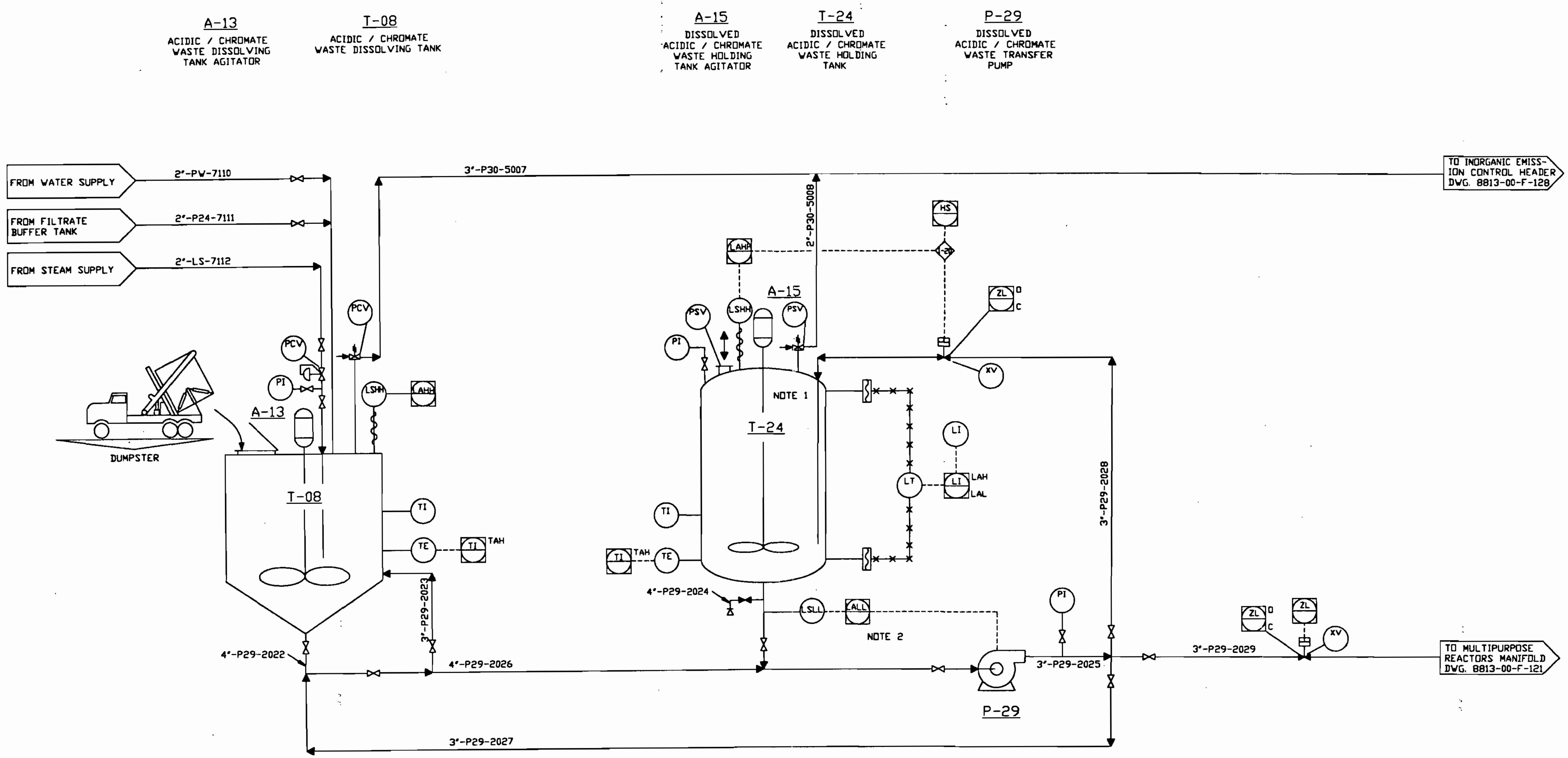
TITLE
P&ID INORGANIC TREATMENT ACIDIC/CHROMATE CONTAINERIZED WASTE HANDLING

SHEET 1 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
MJA	3/9/89			8813-00-F-100	E
CHKD	DATE		DATE		

8813F100

E-2



NOTES:

1. THE DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
2. A LOW LOW LEVEL ALARM AUTOMATICALLY STOPS THE FIELD PUMP.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
A	3/10/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

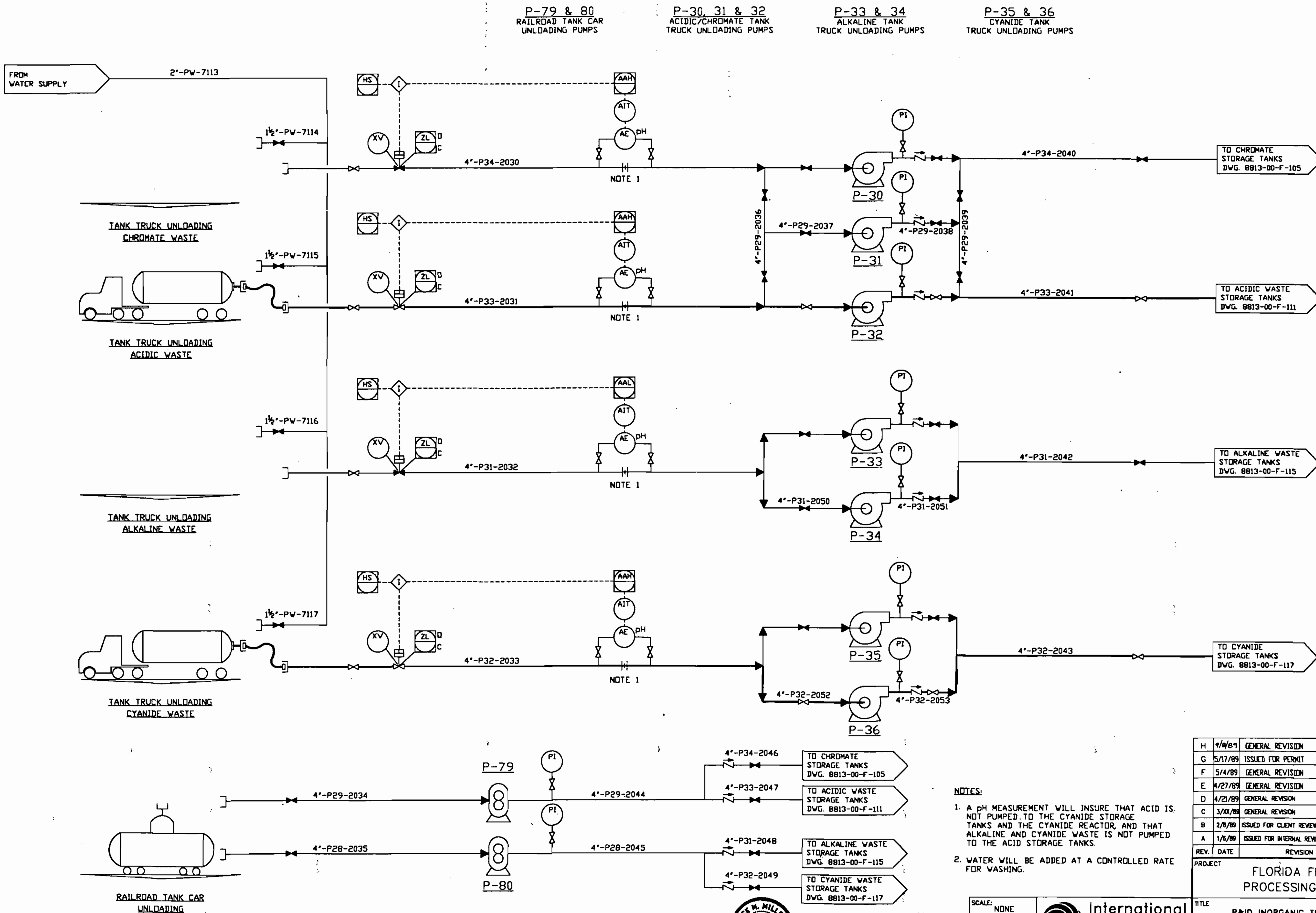
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID INORGANIC TREATMENT ACIDIC/CHROMATE CONTAINERIZED WASTE HANDLING
SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
MJA	3/9/89			8813-00-F-101	F
CHKD	DATE		DATE		

8813F101
F-2



NOTES:

1. A pH MEASUREMENT WILL INSURE THAT ACID IS NOT PUMPED TO THE CYANIDE STORAGE TANKS AND THE CYANIDE REACTOR AND THAT ALKALINE AND CYANIDE WASTE IS NOT PUMPED TO THE ACID STORAGE TANKS.
2. WATER WILL BE ADDED AT A CONTROLLED RATE FOR WASHING.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

REV.	DATE	REVISION	BY	CHKD
H	9/8/89	GENERAL REVISION	L.C.D.	[signature]
G	5/17/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

SCALE: NONE

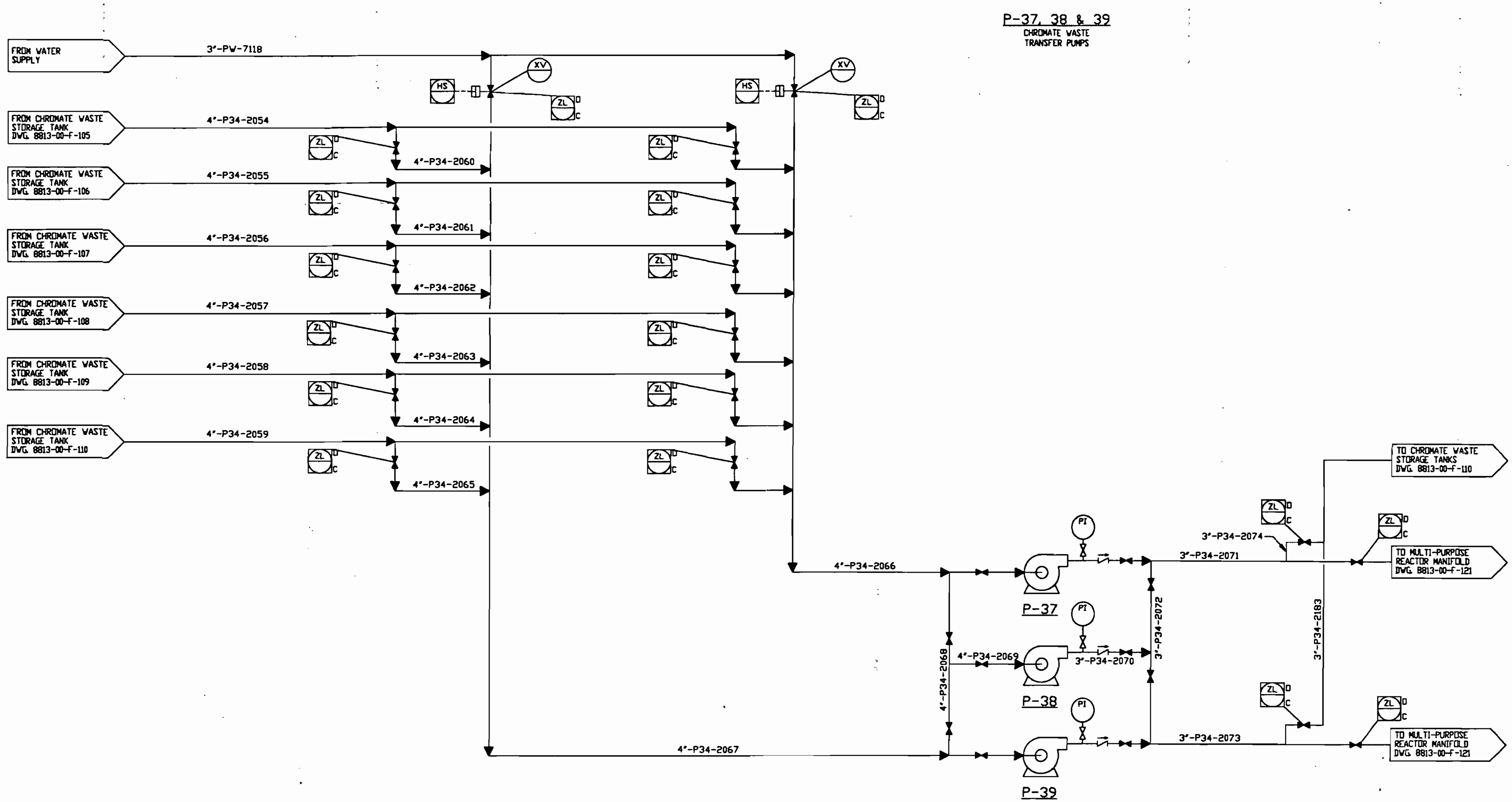
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE: P&ID INORGANIC TREATMENT BULK PUMPABLES HANDLING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	1/13/88			8813-00-F-102	H
CHKD	DATE		DATE		

8813F102

H-3



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	M.K.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/06/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

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[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

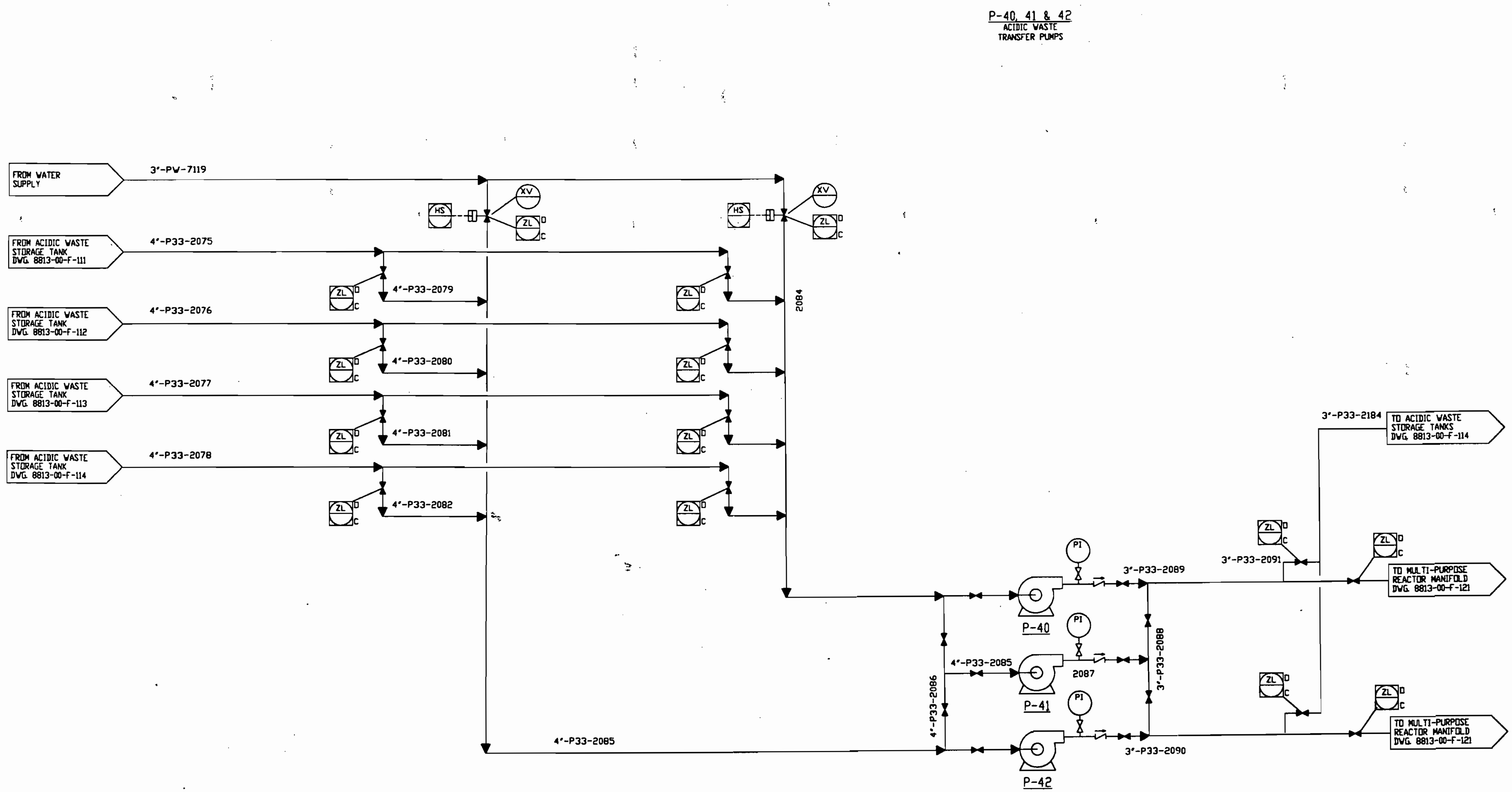
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT CHROMATE WASTE MANIFOLD AND FEED PUMPS

DRAWN D.C.A. | DATE 1/06/89 | APPD | DATE | DRAWING NO. 8813-00-F-103 | REV. F
CHKD | DATE | | DATE

8813F103

F-1



REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	J.E.N.	
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/06/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT ACIDIC WASTE MANIFOLD AND FEED PUMPS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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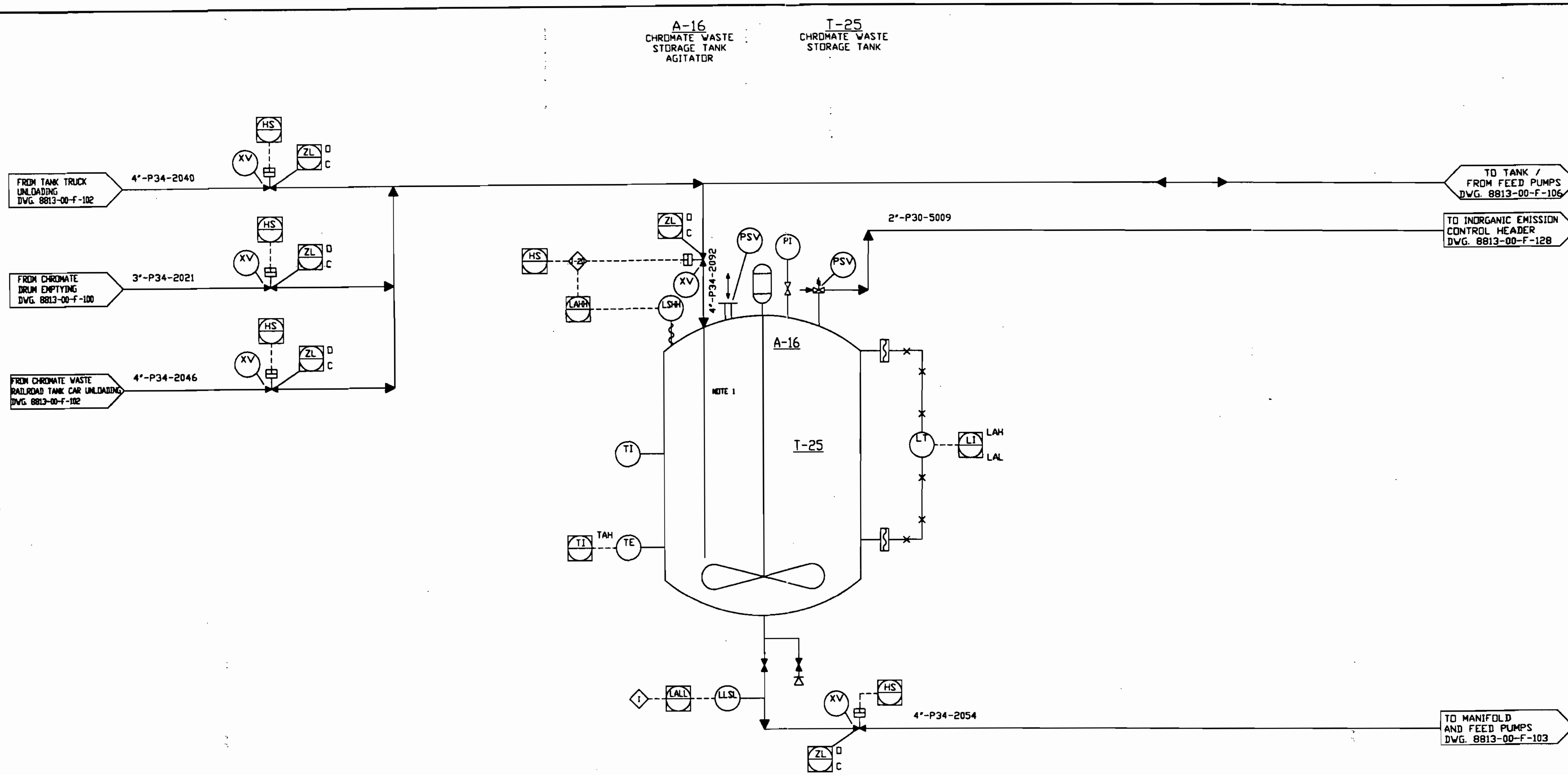
Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	1/06/89			8813-00-F-104	F
CHKD	DATE		DATE		

8813F104



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	J.E.N.	[illegible]
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	L.C.D.
E	5/4/89	GENERAL REVISION	L.C.D.	L.C.D.
D	4/27/89	GENERAL REVISION	L.C.D.	L.C.D.
C	4/21/89	GENERAL REVISION	L.C.D.	L.C.D.
B	3/XX/89	GENERAL REVISION		L.C.D.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.C.D.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

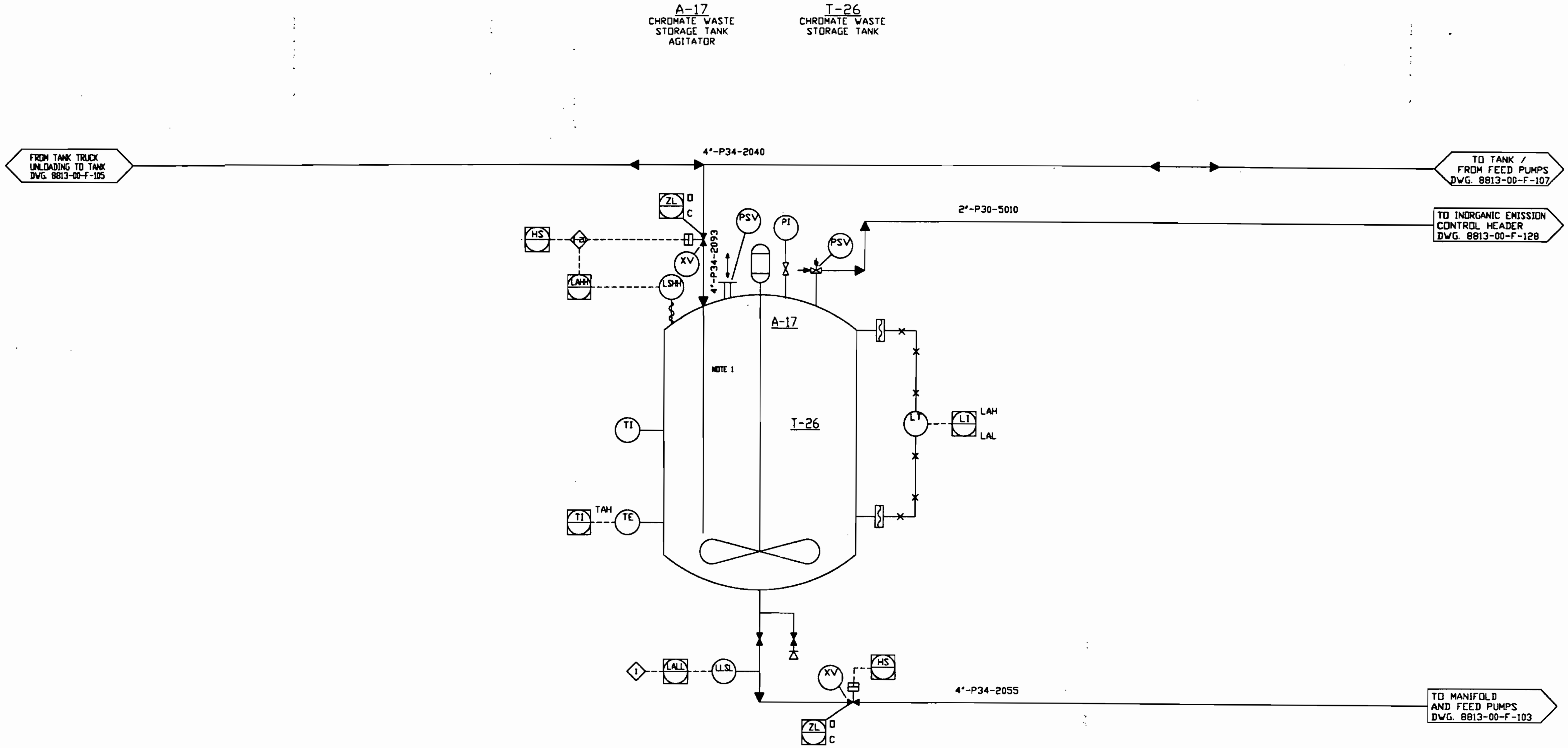
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT CHROMATE WASTE STORAGE TANKS SHEET 1 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-105	G
CHKD	DATE		DATE		

8813F105

G-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	J.E.N.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

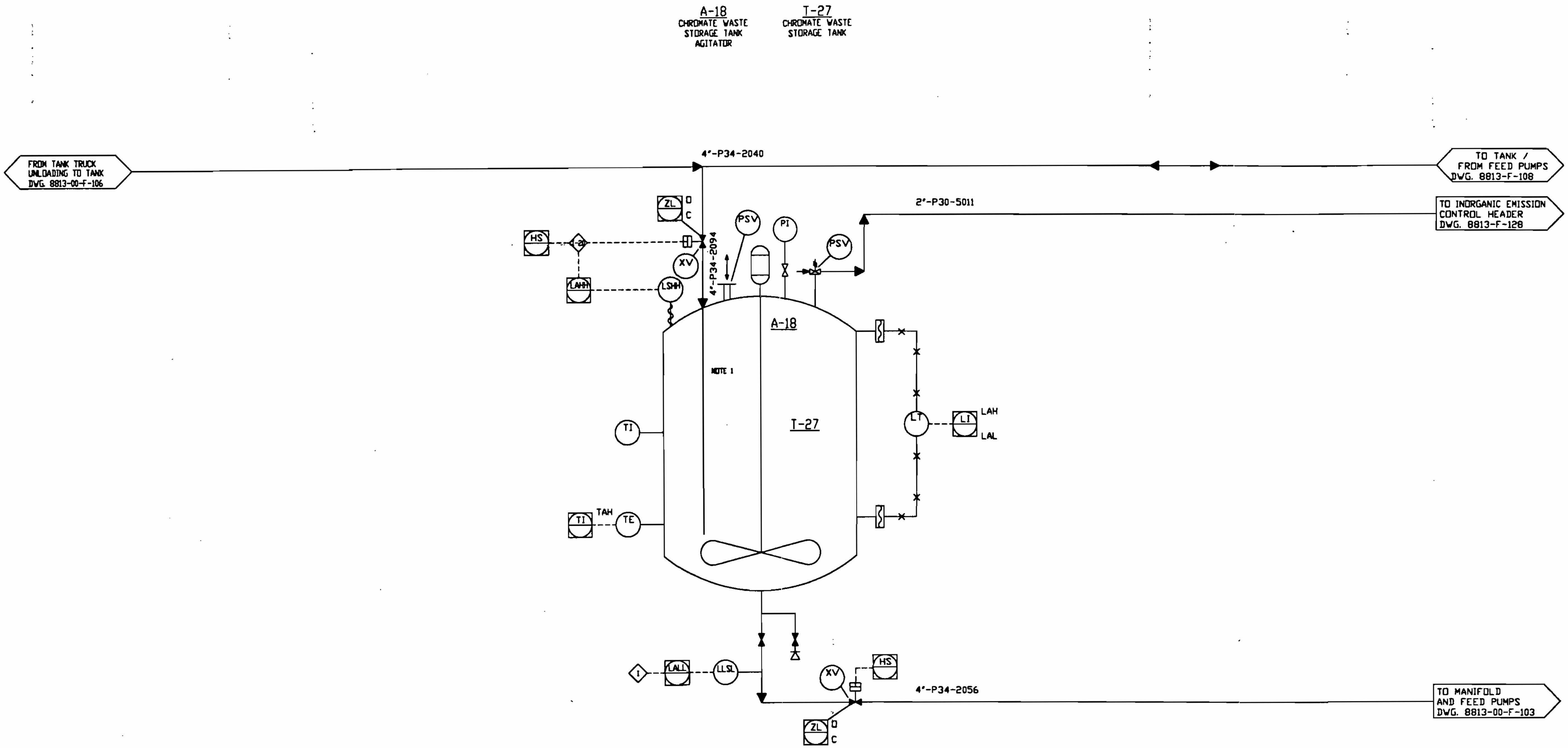
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT CHROMATE WASTE STORAGE TANKS SHEET 2 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-106	F
CHKD	DATE		DATE		

8813F106

F-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/9/89	GENERAL REVISION	J.E.N.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	W.A.M.	L.D.C.

PROJECT

FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems

ST. LOUIS, MO.

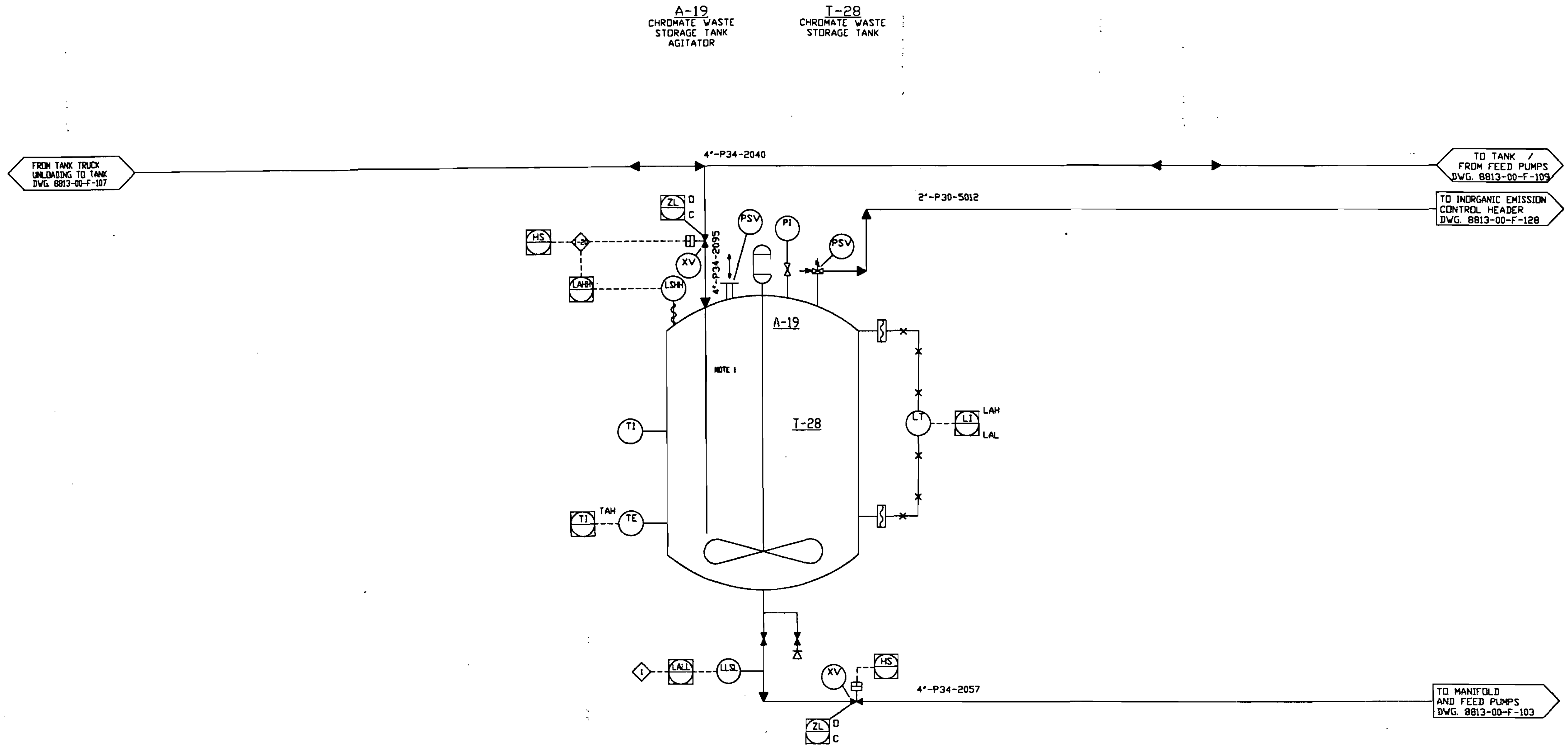
TITLE

P&ID INORGANIC TREATMENT
CHROMATE WASTE STORAGE TANKS
SHEET 3 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-107	G
CHKD	DATE		DATE		

8813F107

G-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	J.E.N.	[signature]
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT

FLORIDA FIRST PROCESSING, INC.

TITLE

P&ID INORGANIC TREATMENT
CHROMATE WASTE STORAGE TANKS
SHEET 4 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-108	F
CHKD	DATE		DATE		

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20527 STATE OF FLORIDA REGISTERED ENGINEER

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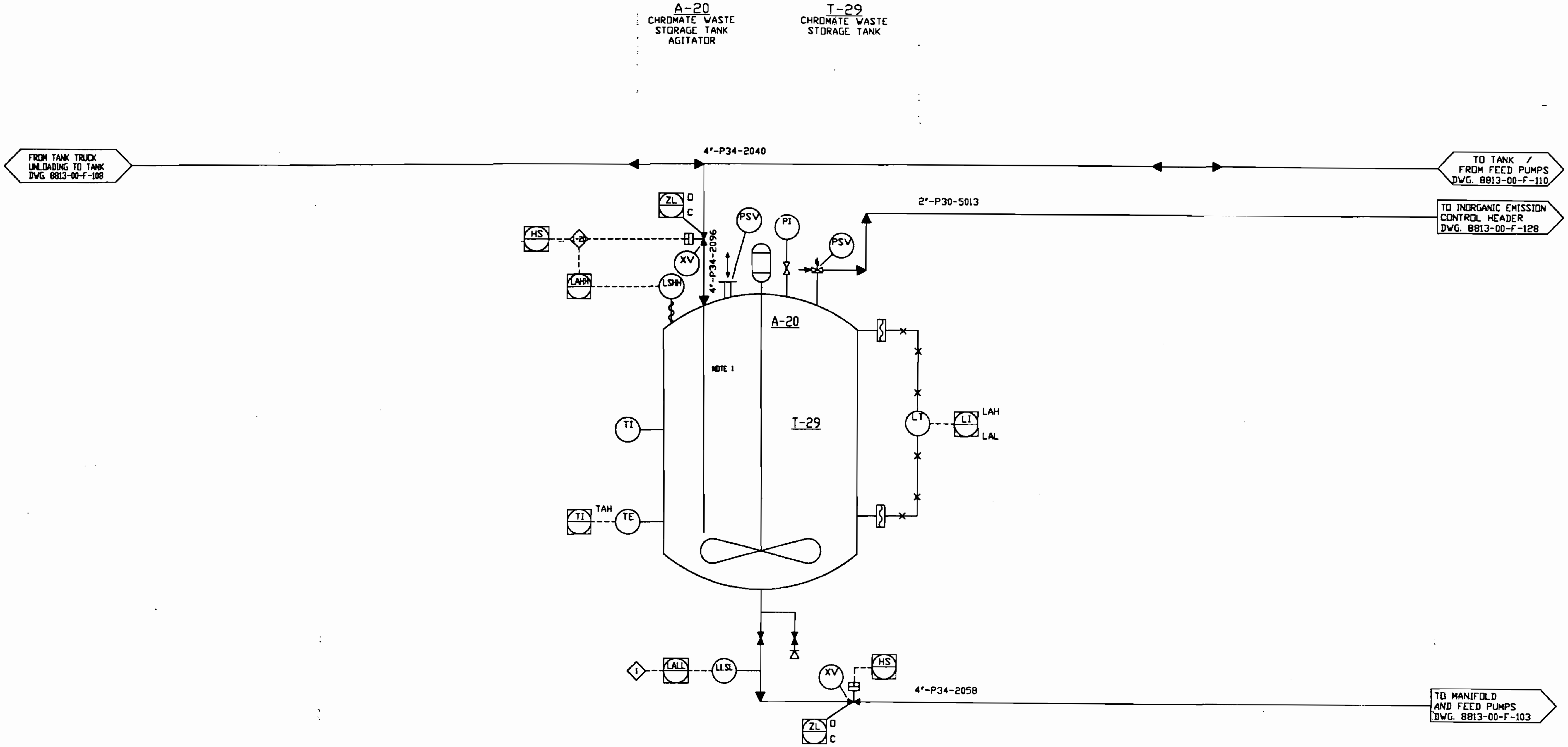
[signature] 9/15/89

8813F108

F-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/18/89	GENERAL REVISION	J.E.M.	
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST
PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT
CHROMATE WASTE STORAGE TANKS
SHEET 5 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-109	F
CHKD	DATE		DATE		

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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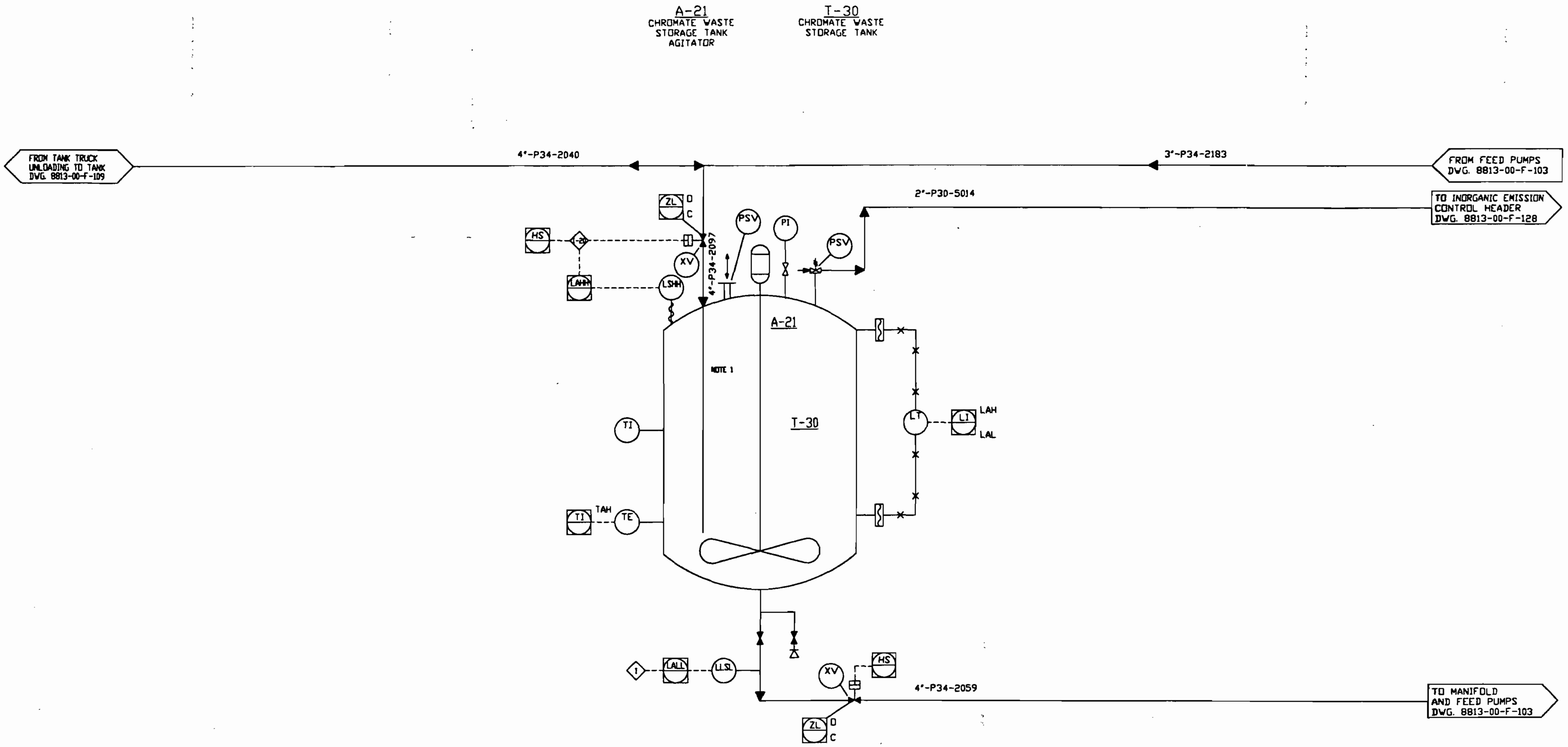
Dick M. Miller 9/25/89

8813F109

F-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	J.E.N.	JDG
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

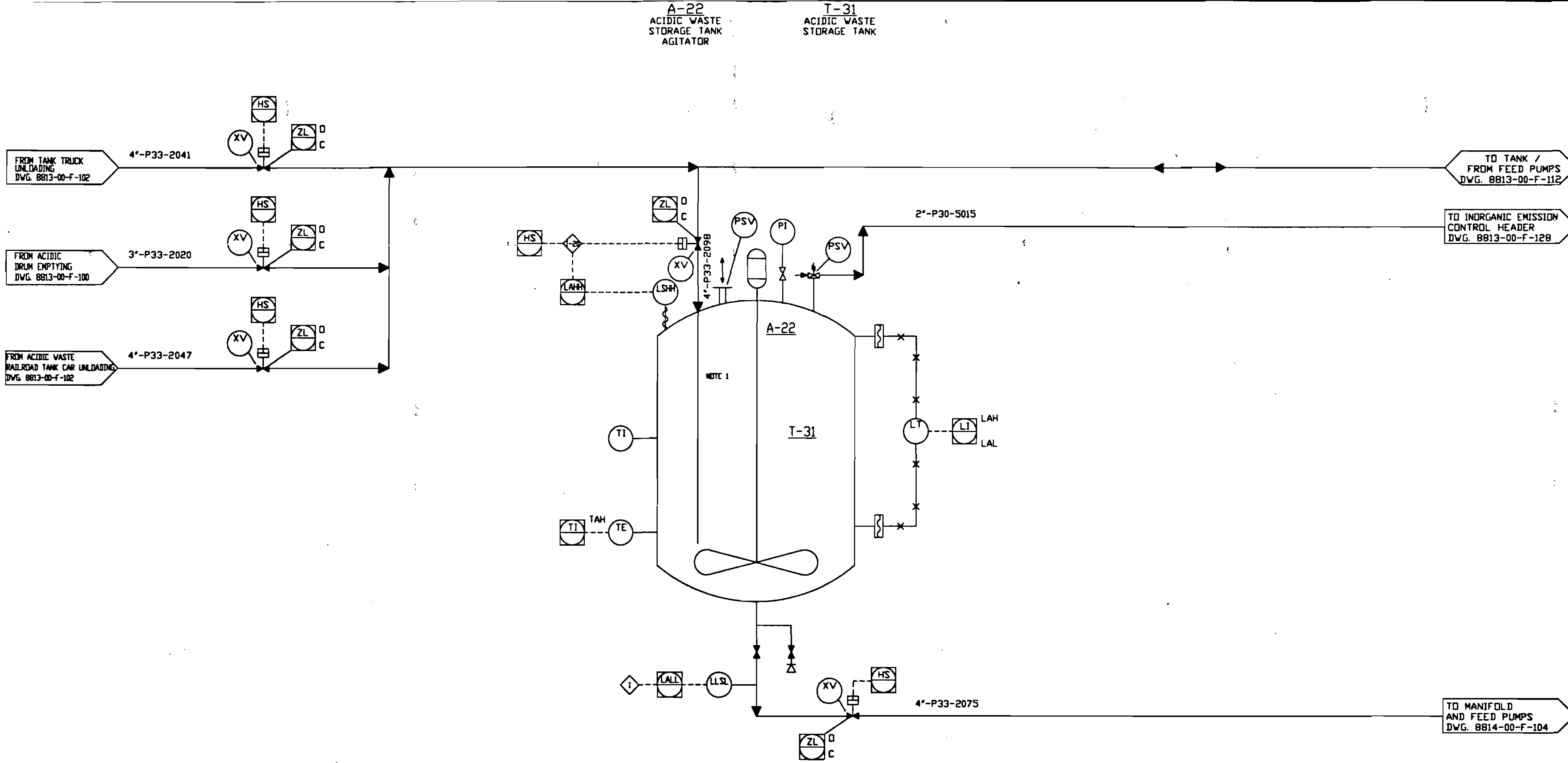
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT
CHROMATE WASTE STORAGE TANKS
SHEET 6 OF 6

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-110	F
CHKD	DATE		DATE		

8813F110

F-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	J.E.M.	
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

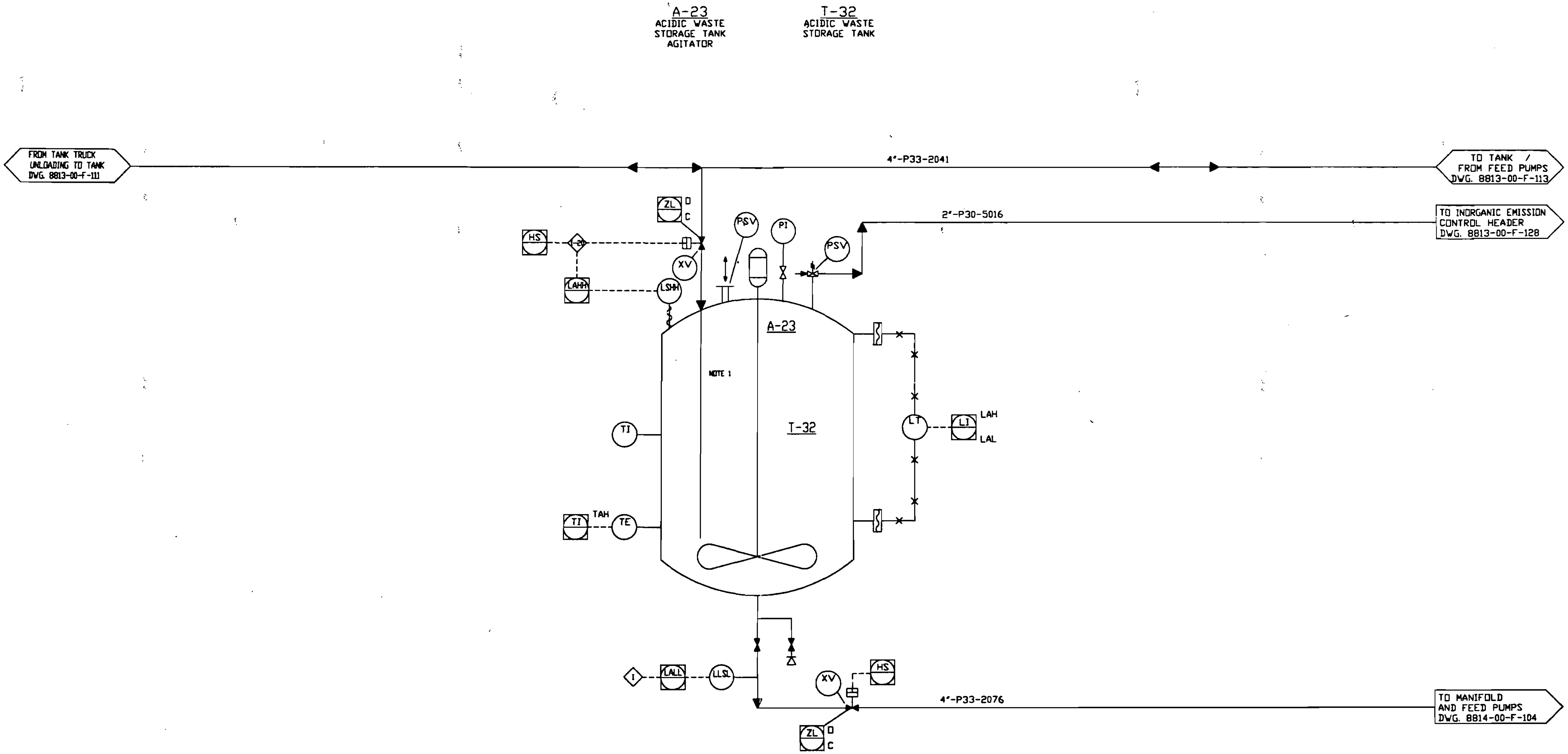
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT
ACIDIC WASTE STORAGE TANKS
SHEET 1 OF 4

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-111	G
CHKD	DATE		DATE		

8813F111

G-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

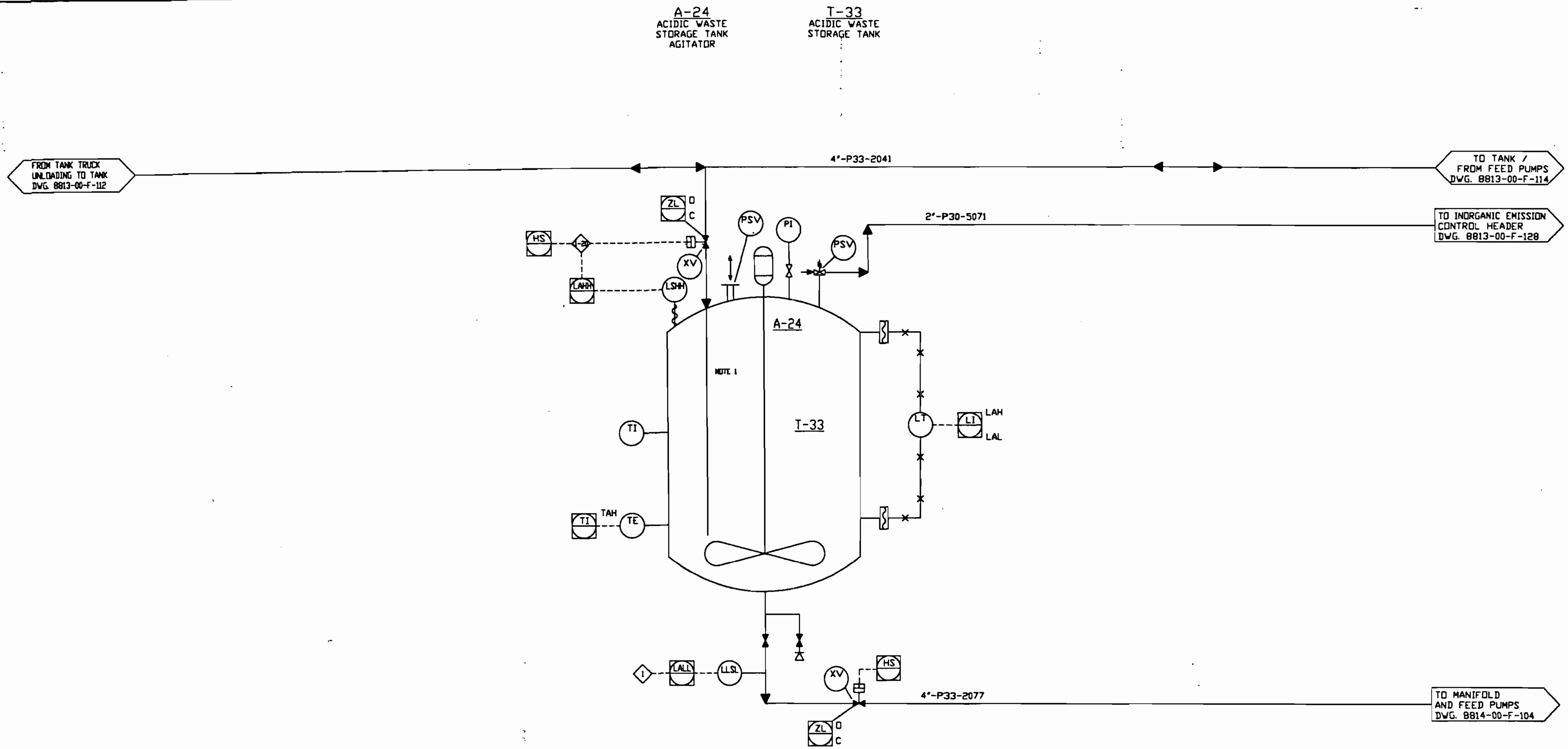
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID INORGANIC TREATMENT
ACIDIC WASTE STORAGE TANKS
SHEET 2 OF 4

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-112	F
CHKD	DATE		DATE		

8813F112
F-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT

FLORIDA FIRST PROCESSING, INC.

TITLE

P&ID INORGANIC TREATMENT
ACIDIC WASTE STORAGE TANKS
SHEET 3 OF 4

DICK M. MILLER
CERTIFICATE
No. 20927
STATE OF FLORIDA
REGISTERED ENGINEER

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Dick M. Miller 9/25/89

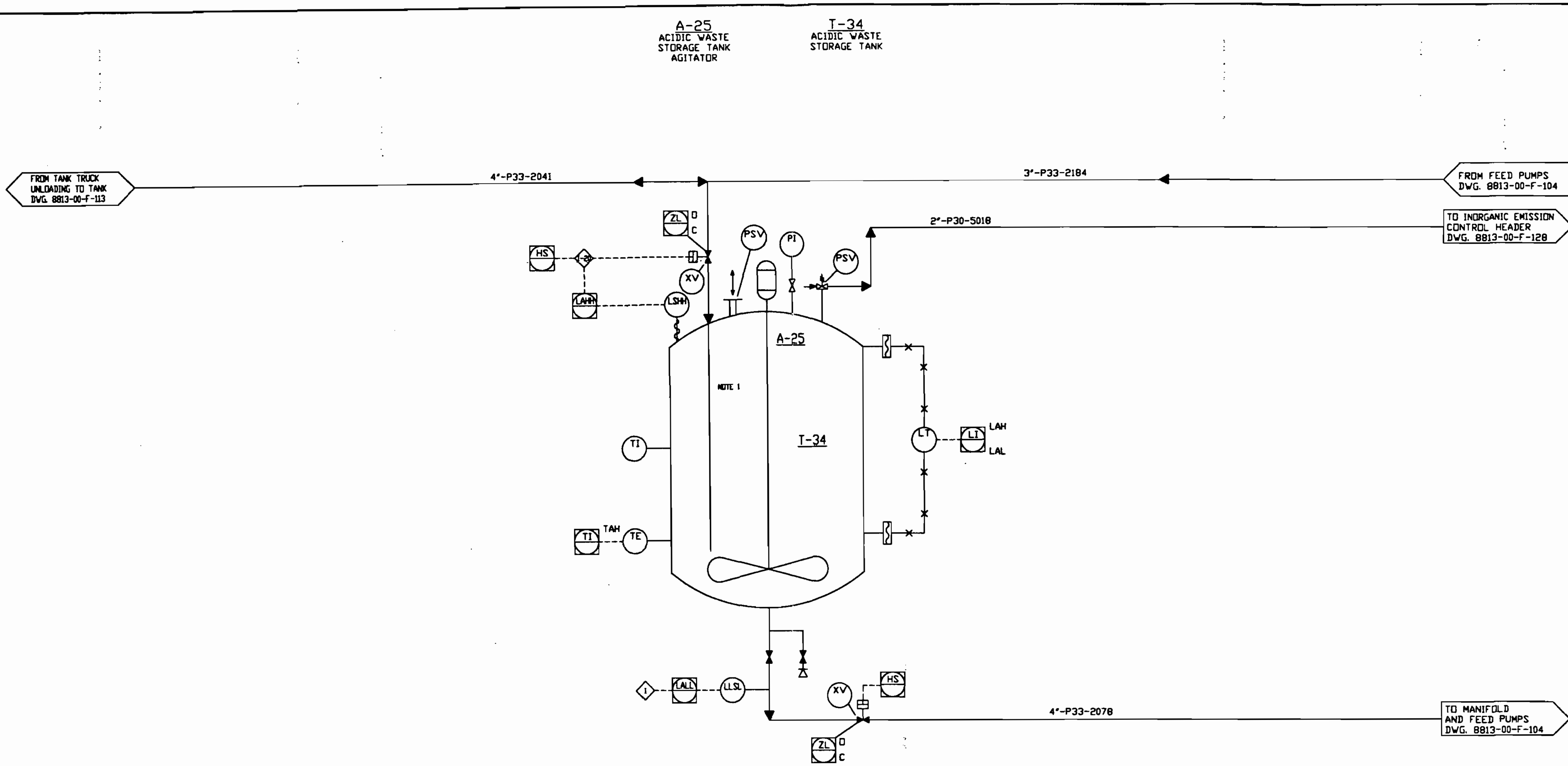
SCALE: NONE

International WasteEnergy Systems

ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-113	F
CHKD	DATE		DATE		

8813F113



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	L.C.D.	SDF
E	5/4/89	GENERAL REVISION	L.C.D.	
D	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

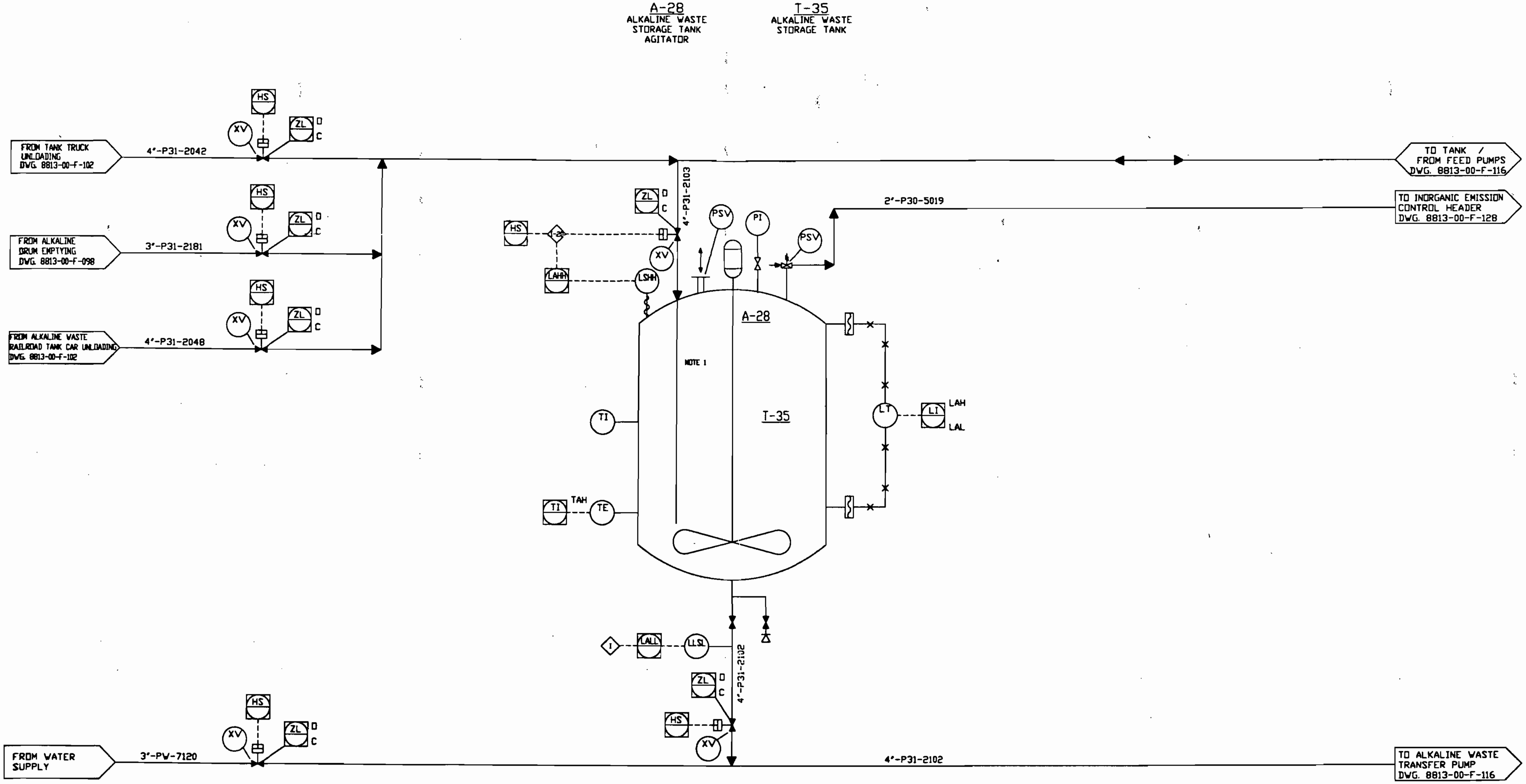
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
P&ID INORGANIC TREATMENT
ACIDIC WASTE STORAGE TANKS
SHEET 4 OF 4

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88			8813-00-F-114	F
CHKD	DATE		DATE		

8813F114



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	L.C.D.	
F	5/17/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
E	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION		L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT ALKALINE WASTE STORAGE TANK SHEET 1 OF 2

DICK M. MILLER CERTIFICATE No. 20827 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

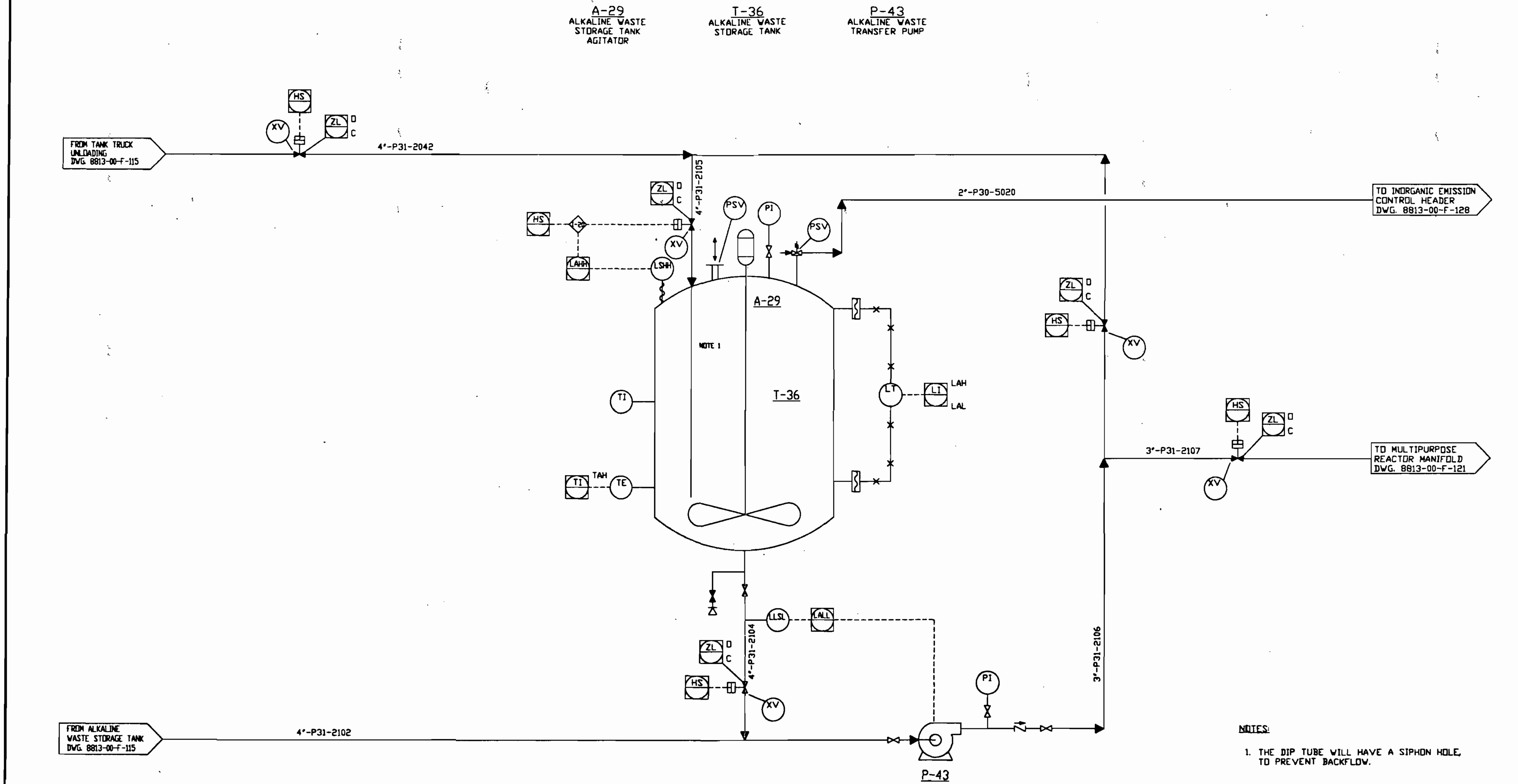
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.A.M.	12/30/88		DATE	8813-00-F-115	G
CHKD	DATE		DATE		

8813F115

G-1



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
C	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
B	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
A	4/21/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

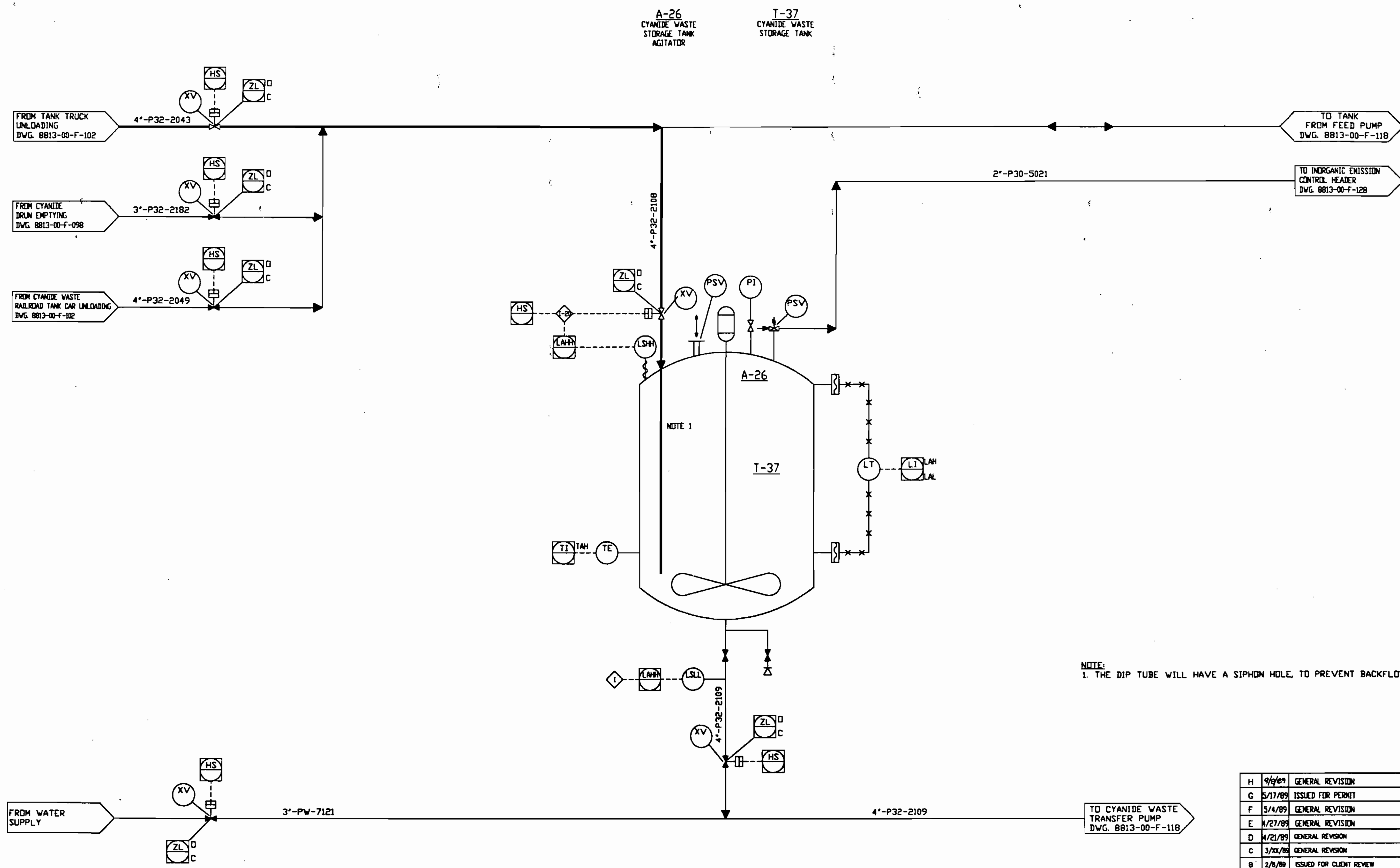
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT ALKALINE WASTE STORAGE TANK SHEET 2 OF 2

DRAWN W.A.M.	DATE 12/30/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-F-116	C

8813F116

C-1



NOTE:
1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
H	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
G	5/17/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	L.C.D.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	D.C.A.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT
CYANIDE WASTE STORAGE TANKS
SHEET 1 OF 2

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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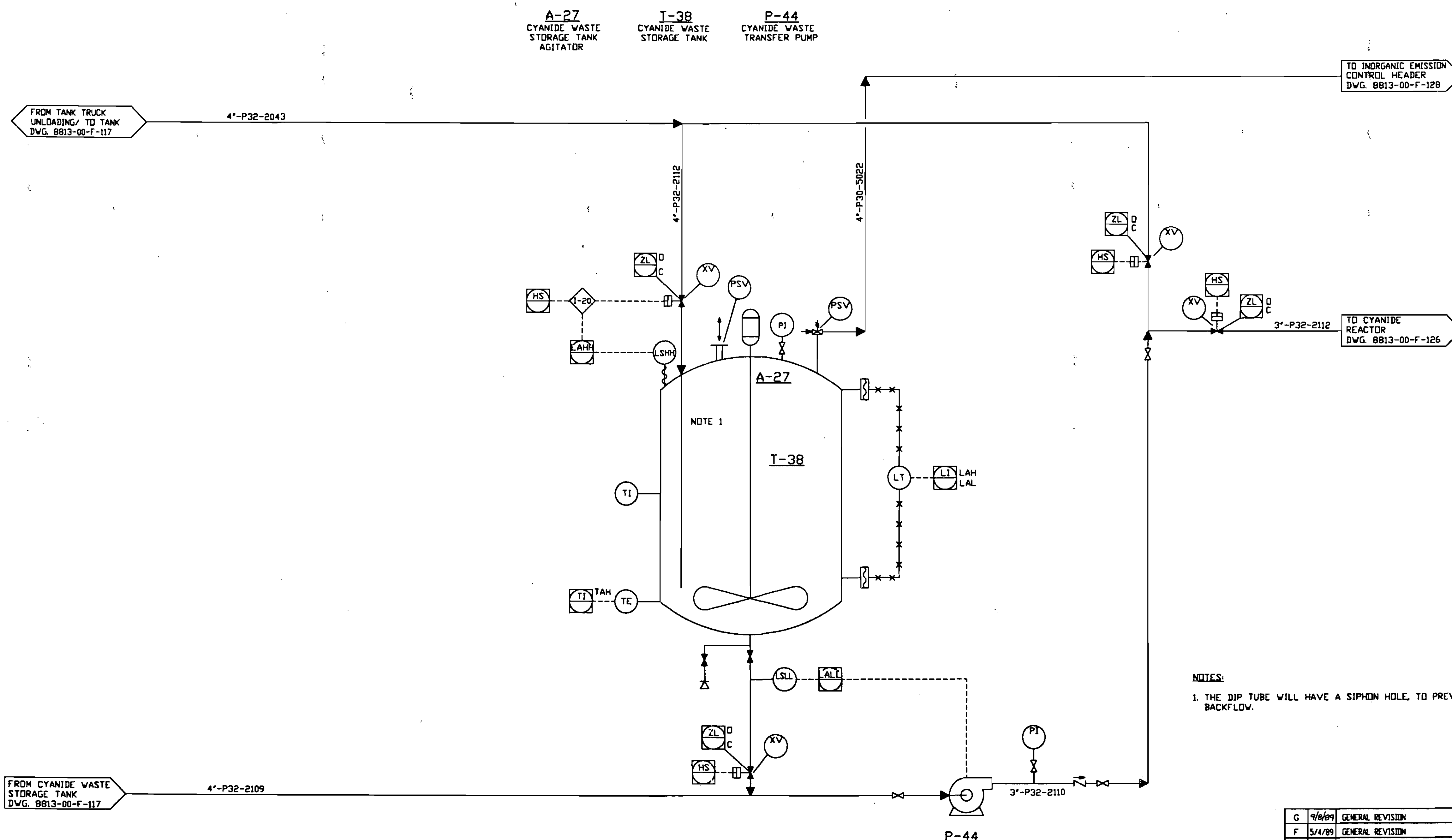
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
D.C.A.	1/3/89			8813-00-F-117	H
CHKD	DATE		DATE		

8813F117



NOTES:

1. THE DIP TUBE WILL HAVE A SIPHON HOLE, TO PREVENT BACKFLOW.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	M.J.A.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE: NONE

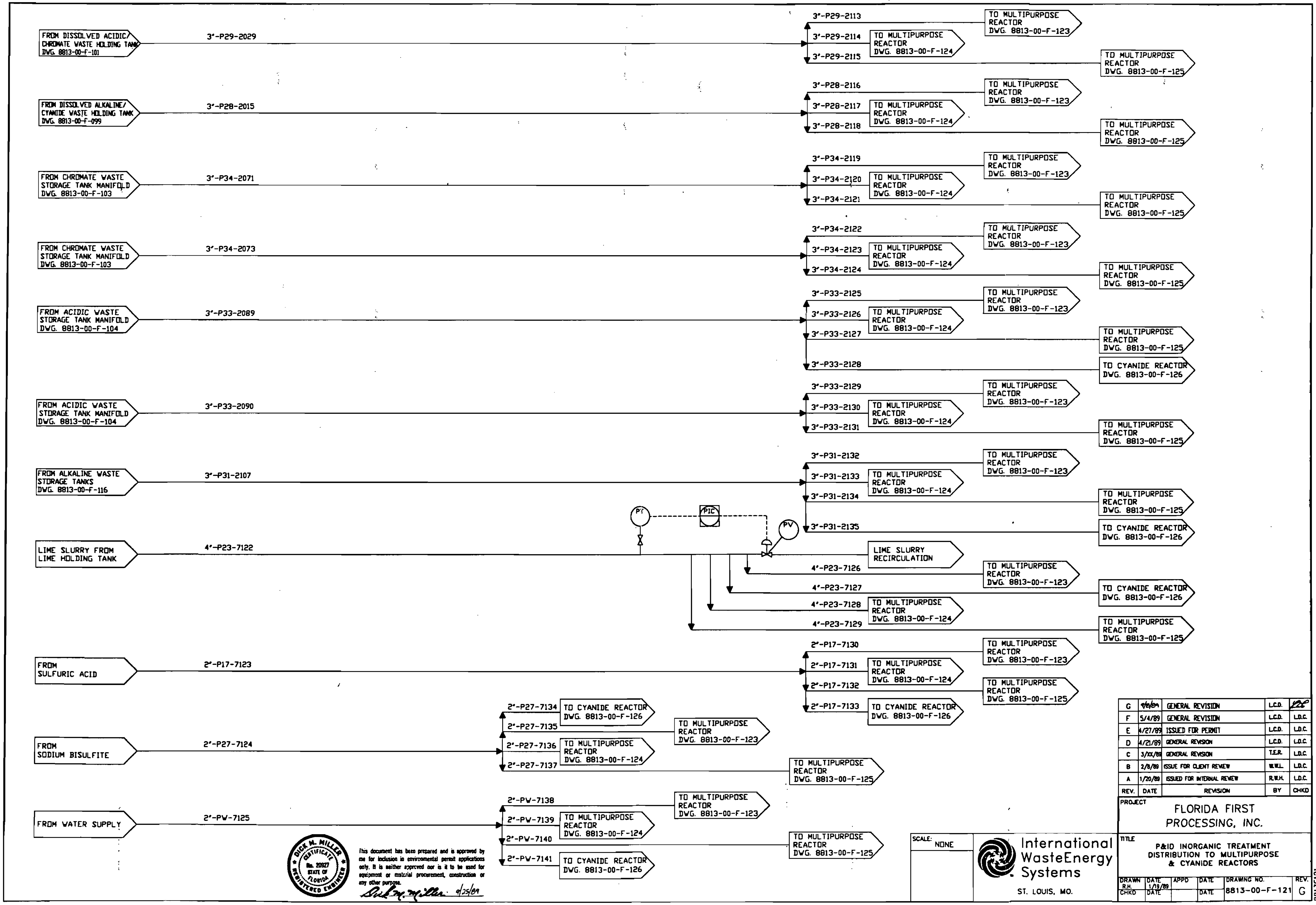
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID INORGANIC TREATMENT CYANIDE WASTE STORAGE TANKS SHEET 2 OF 2

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.W.L.	1/3/89			8813-00-F-118	G
CHKD	DATE		DATE		

8813F118



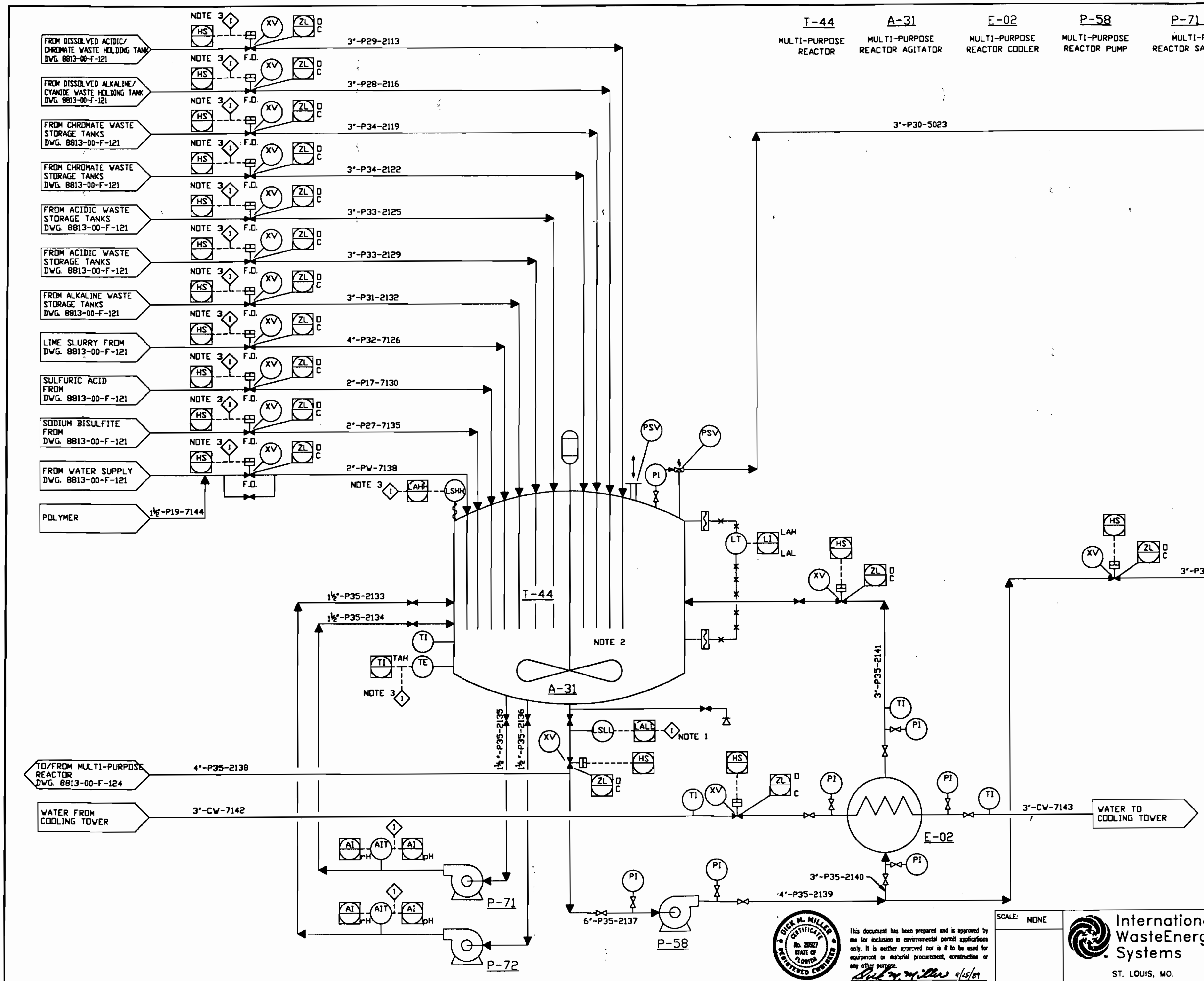
REV.	DATE	REVISION	BY	CHKD
G	9/6/89	GENERAL REVISION	L.C.D.	
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	T.E.R.	L.D.C.
B	2/8/89	ISSUE FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/20/89	ISSUED FOR INTERNAL REVIEW	R.W.H.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT DISTRIBUTION TO MULTIPURPOSE & CYANIDE REACTORS

DRAWN R.H. DATE 1/19/89 APPD DATE CHKD DATE DRAWING NO. 8813-00-F-121 REV. G

8813F121



NOTES:

1. AN ALARM FOR LOW LOW LEVEL AUTOMATICALLY STOPS THE REACTOR PUMPS.
2. ALL DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
3. THE CONDITION OF HIGH/HIGH LEVEL OR HIGH TEMPERATURE WILL CAUSE THE CLOSING OF ALL FEED VALVES TO TANK.

REV.	DATE	REVISION	BY	CHKD
H	9/8/89	GENERAL REVISION	L.C.D.	[illegible]
G	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
F	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
E	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	T.E.R.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/20/89	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P&ID INORGANIC TREATMENT SYSTEM MULTIPURPOSE REACTORS SHEET 1 OF 3

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN W.W.L. DATE 1/19/89 | APPD | DATE | DRAWING NO. 8813-00-F-123 | REV. H
CHKD | DATE | DATE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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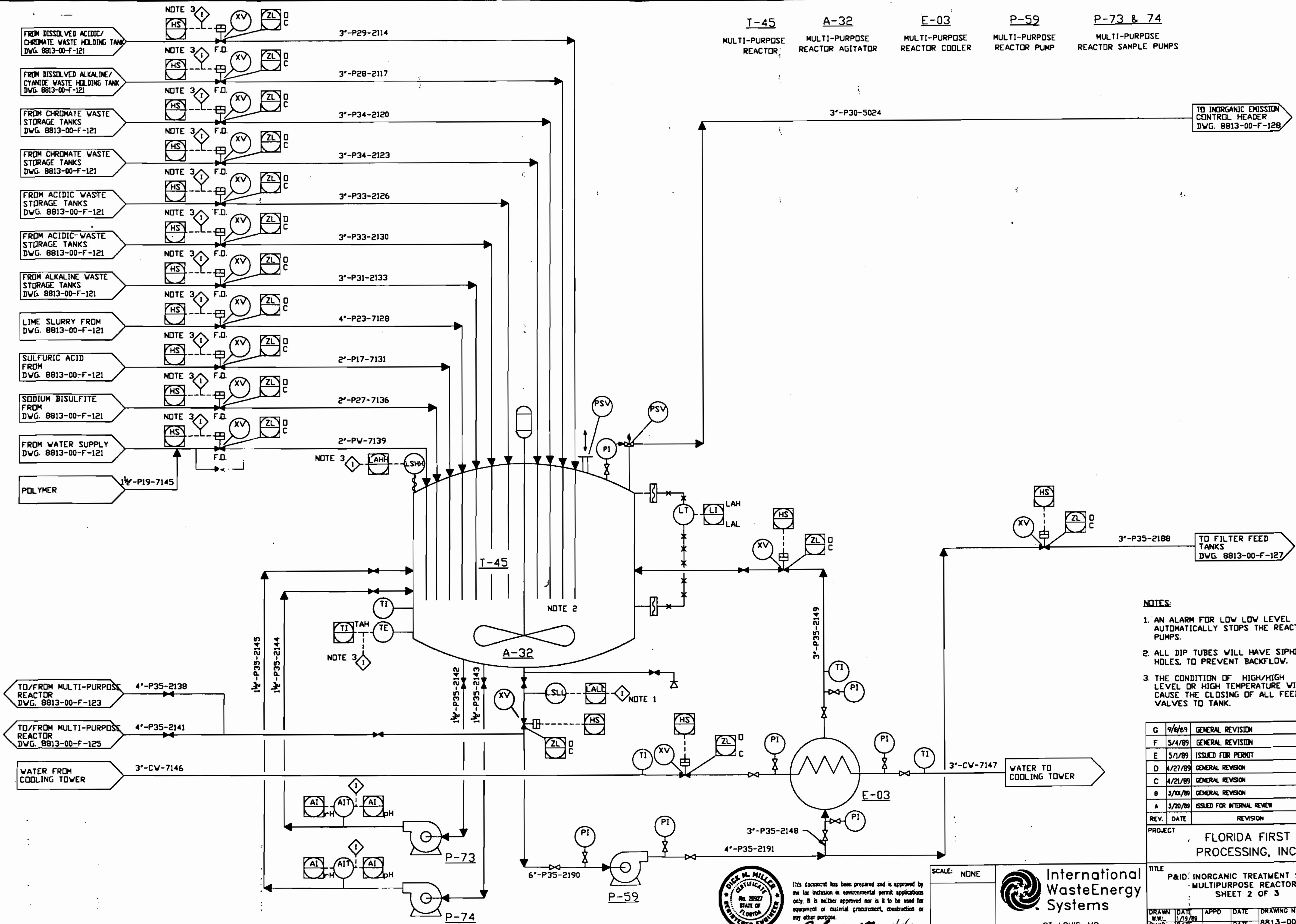
Dick M. Miller 9/15/89

8813F123
H-2



NOTES:

1. AN ALARM FOR LOW LOW LEVEL AUTOMATICALLY STOPS THE REACTOR PUMPS.
2. ALL DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
3. THE CONDITION OF HIGH/HIGH LEVEL OR HIGH TEMPERATURE WILL CAUSE THE CLOSING OF ALL FEED VALVES TO TANK.

REV.	DATE	REVISION	BY	CHKD
G	9/6/89	GENERAL REVISION	L.C.D.	[illegible]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	T.E.R.	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

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DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

Dick M. Miller 9/25/89

SCALE: NONE

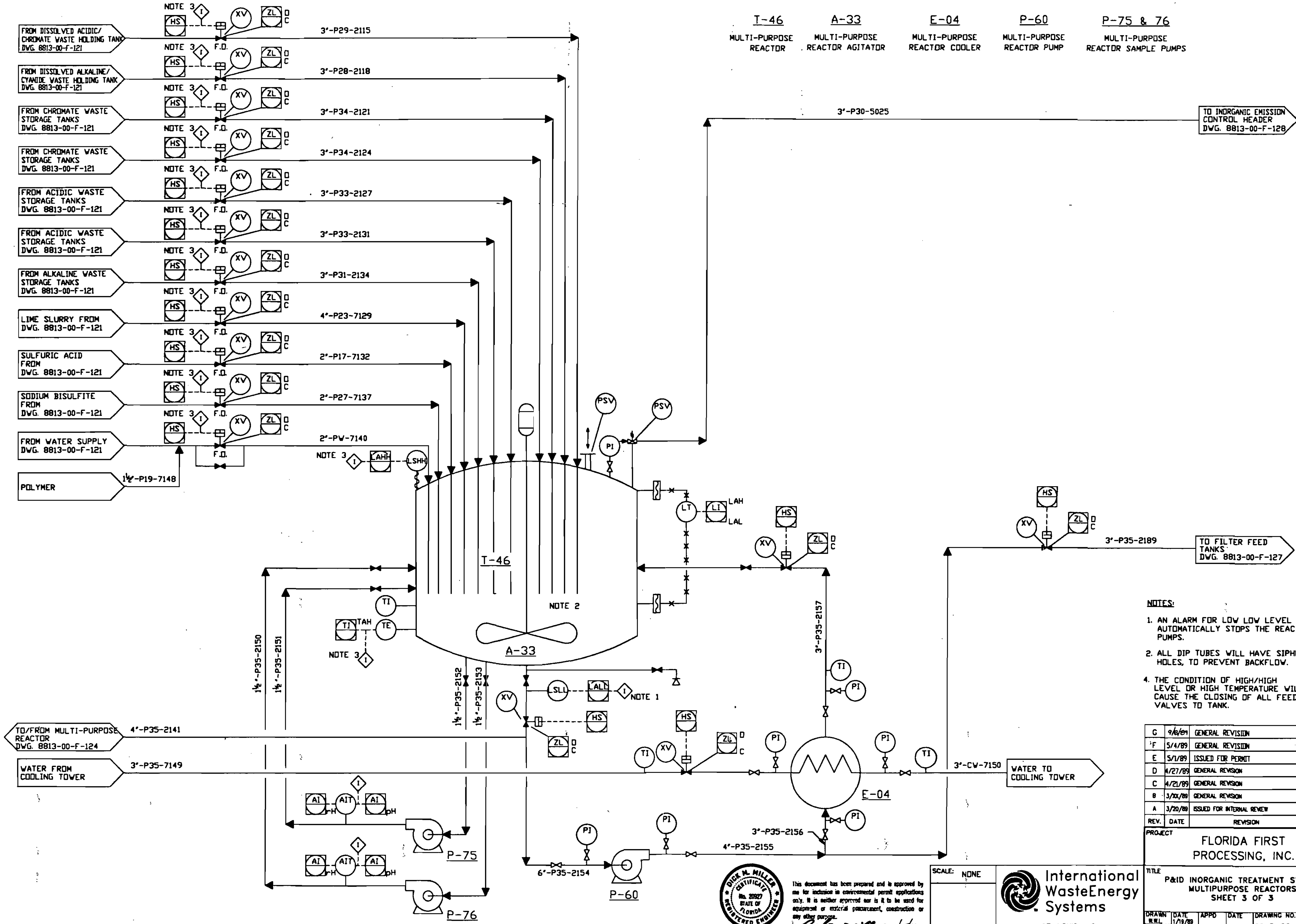
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT FLORIDA FIRST PROCESSING, INC.

TITLE P&ID: INORGANIC TREATMENT SYSTEM MULTIPURPOSE REACTORS SHEET 2 OF 3

DRAWN W.W.L. DATE 1/19/89 APPD DATE CHKD DATE DRAWING NO. 8813-00-F-124 REV. G

8813F124



NOTES:

1. AN ALARM FOR LOW LOW LEVEL AUTOMATICALLY STOPS THE REACTOR PUMPS.
2. ALL DIP TUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
4. THE CONDITION OF HIGH/HIGH LEVEL OR HIGH TEMPERATURE WILL CAUSE THE CLOSING OF ALL FEED VALVES TO TANK.

REV.	DATE	REVISION	BY	CHKD
G	9/8/89	GENERAL REVISION	L.C.D.	[signature]
F	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
E	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
C	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
B	3/XX/89	GENERAL REVISION	T.E.R.	L.D.C.
A	3/20/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

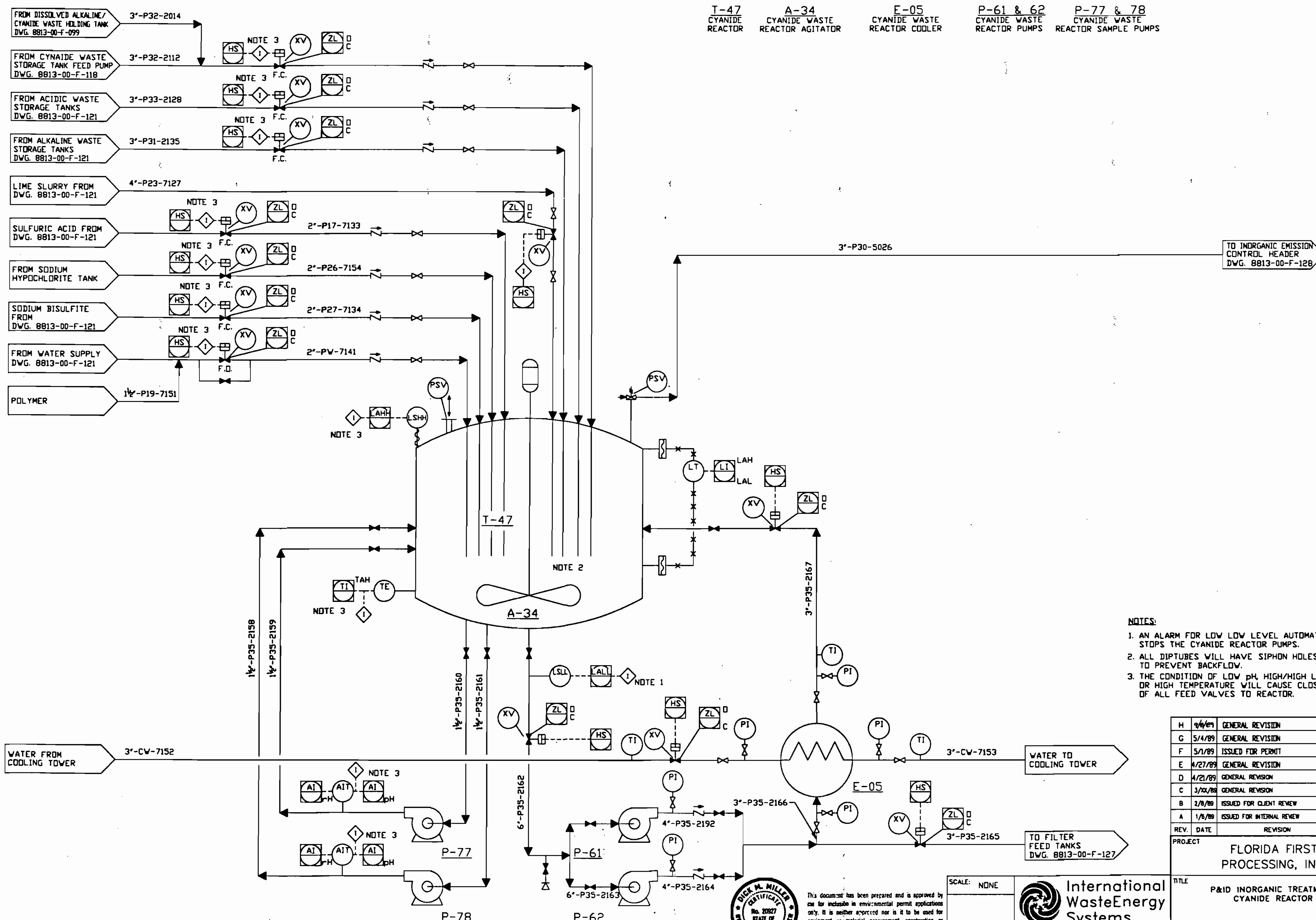
TITLE: P&ID INORGANIC TREATMENT SYSTEM MULTIPURPOSE REACTORS SHEET 3 OF 3

DRAWN R.W.L. DATE 1/19/89 | APPD | DATE | DRAWING NO. 8813-00-F-125 | REV. G

CHKD | DATE | | DATE

8813F125

G-2



NOTES:

1. AN ALARM FOR LOW LOW LEVEL AUTOMATICALLY STOPS THE CYANIDE REACTOR PUMPS.
2. ALL DIPTUBES WILL HAVE SIPHON HOLES, TO PREVENT BACKFLOW.
3. THE CONDITION OF LOW pH, HIGH/HIGH LEVEL OR HIGH TEMPERATURE WILL CAUSE CLOSING OF ALL FEED VALVES TO REACTOR.

REV.	DATE	REVISION	BY	CHKD
H	9/6/89	GENERAL REVISION	L.C.D.	[illegible]
G	5/4/89	GENERAL REVISION	L.C.D.	L.D.C.
F	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
E	4/27/89	GENERAL REVISION	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	T.E.R.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

PROJECT FLORIDA FIRST PROCESSING, INC.

TITLE P&ID INORGANIC TREATMENT CYANIDE REACTOR

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN W.W.L. DATE 12/30/88 APPD DATE
CHKD DATE DATE
DRAWING NO. 8813-00-F-126 REV. H

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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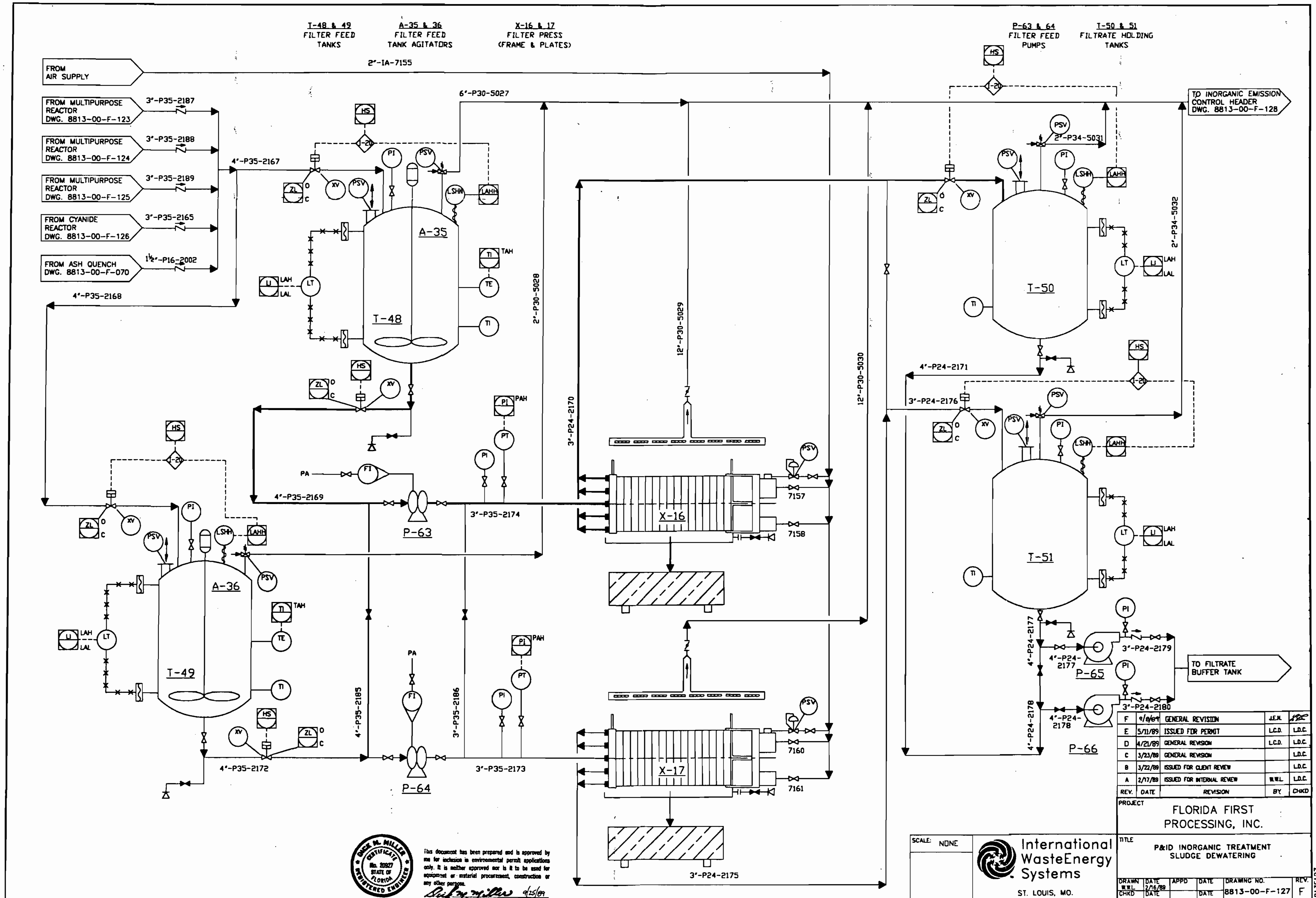
[signature] 9/25/89

8813F126



T-48 & 49 FILTER FEED TANKS
A-35 & 36 FILTER FEED TANK AGITATORS
X-16 & 17 FILTER PRESS (FRAME & PLATES)
P-63 & 64 FILTER FEED PUMPS
T-50 & 51 FILTRATE HOLDING TANKS
FROM AIR SUPPLY
2"-IA-7155
FROM MULTIPURPOSE REACTOR DWG. 8813-00-F-123
3"-P35-2187
FROM MULTIPURPOSE REACTOR DWG. 8813-00-F-124
3"-P35-2188
FROM MULTIPURPOSE REACTOR DWG. 8813-00-F-125
3"-P35-2189
FROM CYANIDE REACTOR DWG. 8813-00-F-126
3"-P35-2165
FROM ASH QUENCH DWG. 8813-00-F-070
1½"-P16-2002
4"-P35-2167
4"-P35-2168
6"-P30-5027
TO INORGANIC EMISSION CONTROL HEADER DWG. 8813-00-F-128
2"-P34-5031
2"-P34-5032
2"-P30-5028
12"-P30-5029
12"-P30-5030
3"-P24-2170
4"-P24-2171
3"-P24-2176
A-35
T-48
A-36
T-49
T-50
T-51
X-16
X-17
P-63
P-64
P-65
P-66
4"-P35-2169
3"-P35-2174
4"-P35-2172
3"-P35-2173
4"-P35-2185
3"-P35-2186
7157
7158
7160
7161
3"-P24-2175
4"-P24-2177
4"-P24-2178
3"-P24-2179
3"-P24-2180
TO FILTRATE BUFFER TANK
HS
ZL
XV
PI
PSV
LSHH
LAHH
LI
LT
LAH
LAL
TI
TAH
TE
PT
PAH
FI
PA
I-20
F 9/8/89 GENERAL REVISION
E 5/11/89 ISSUED FOR PERMIT L.C.D. L.D.C.
D 4/21/89 GENERAL REVISION L.C.D. L.D.C.
C 3/23/89 GENERAL REVISION L.D.C.
B 3/22/89 ISSUED FOR CLIENT REVIEW L.D.C.
A 2/17/89 ISSUED FOR INTERNAL REVIEW W.W.L. L.D.C.
REV. DATE REVISION BY CHKD
PROJECT FLORIDA FIRST PROCESSING, INC.
SCALE: NONE
International WasteEnergy Systems
ST. LOUIS, MO.
TITLE P&ID INORGANIC TREATMENT SLUDGE DEWATERING
DRAWN W.W.L. DATE 2/16/89
CHKD DATE APPD DATE
DRAWING NO. 8813-00-F-127 REV. F
DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER
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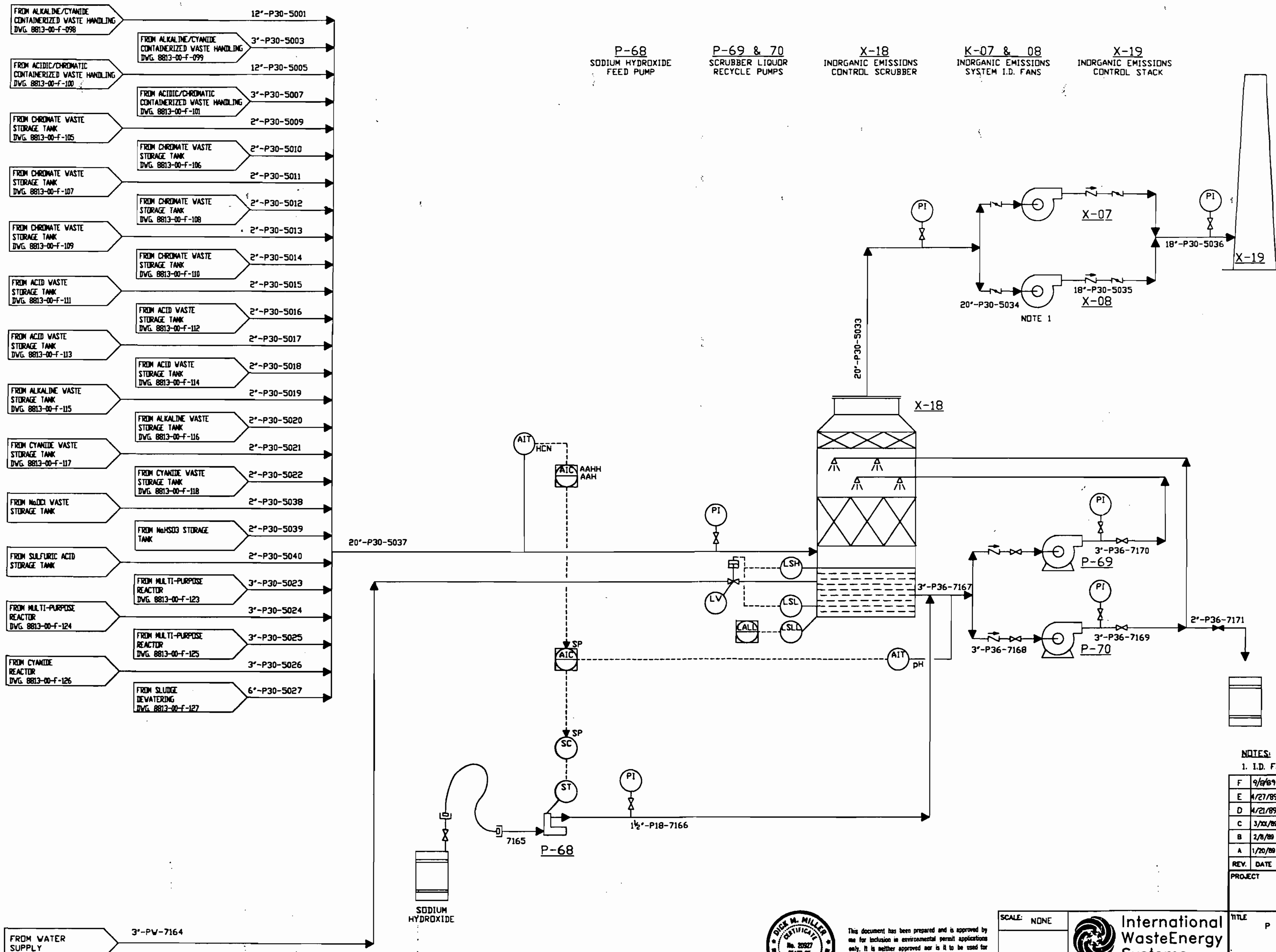
9/25/89

8813F127

F-3



NOTES:

1. I.D. FANS HAVE TWO-SPEED MOTORS.

REV.	DATE	REVISION	BY	CHKD
F	9/8/89	GENERAL REVISION	J.E.N.	
E	4/27/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
D	4/21/89	GENERAL REVISION	L.C.D.	L.D.C.
C	3/XX/89	GENERAL REVISION	M.K.	L.D.C.
B	2/8/89	ISSUED FOR CLIENT REVIEW	W.W.L.	L.D.C.
A	1/20/89	ISSUED FOR INTERNAL REVIEW	W.W.L.	L.D.C.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE: NONE

International WasteEnergy Systems

ST. LOUIS, MO.

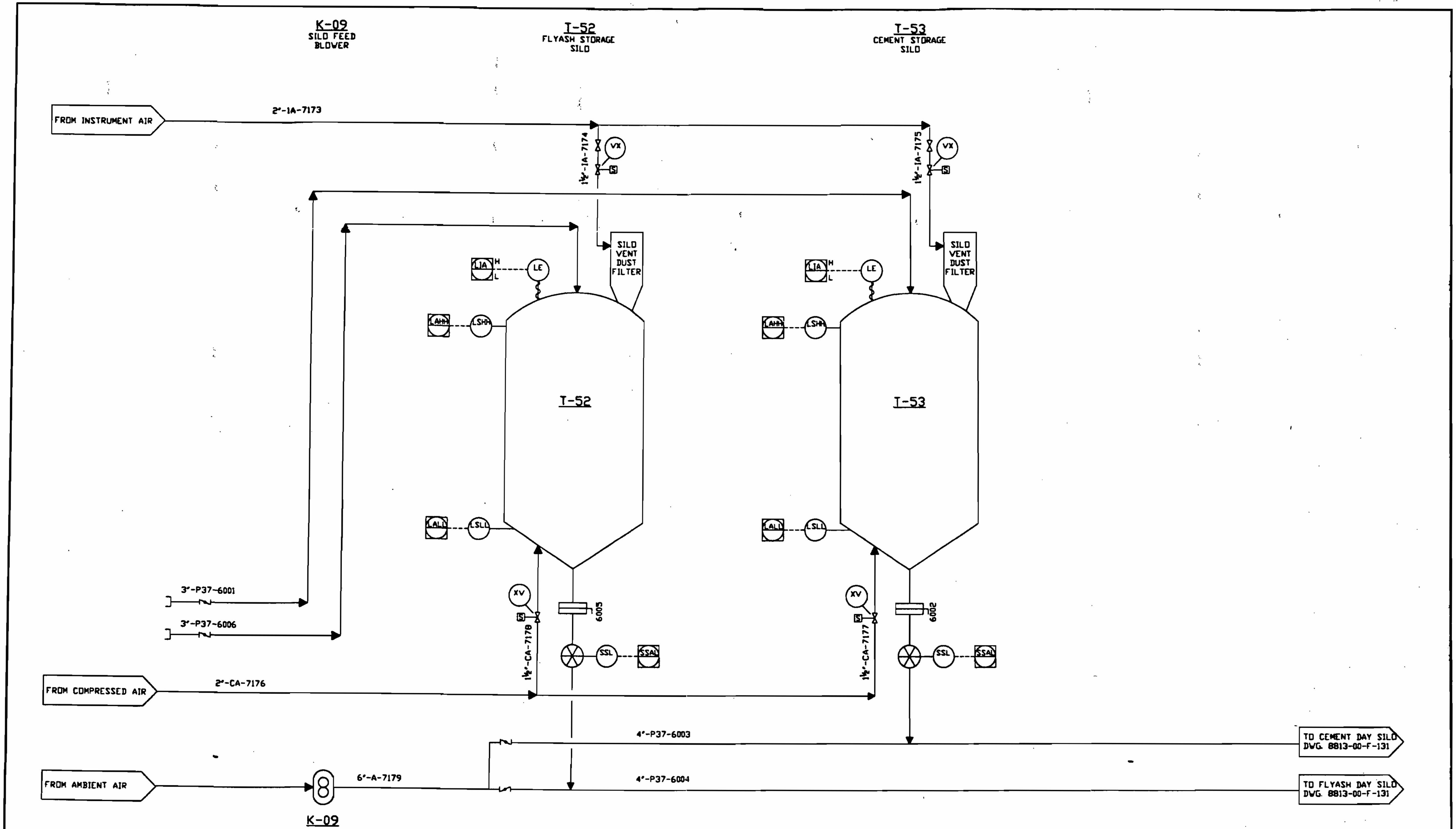
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: P & ID INORGANIC TREATMENT EMISSION CONTROL SYSTEM

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
W.W.L.	1/19/89			8813-00-F-128	F
CHKD	DATE		DATE		

8813F128

F-1



REV.	DATE	REVISION	BY	CHKD
C	9/8/89	GENERAL REVISION	J.E.N.	
B	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
A	4/24/89	ISSUED FOR INTERNAL REVIEW	L.C.D	L.D.C.

PROJECT
FLORIDA FIRST
PROCESSING, INC.

TITLE
P&ID STABILIZATION
STORAGE SILO

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

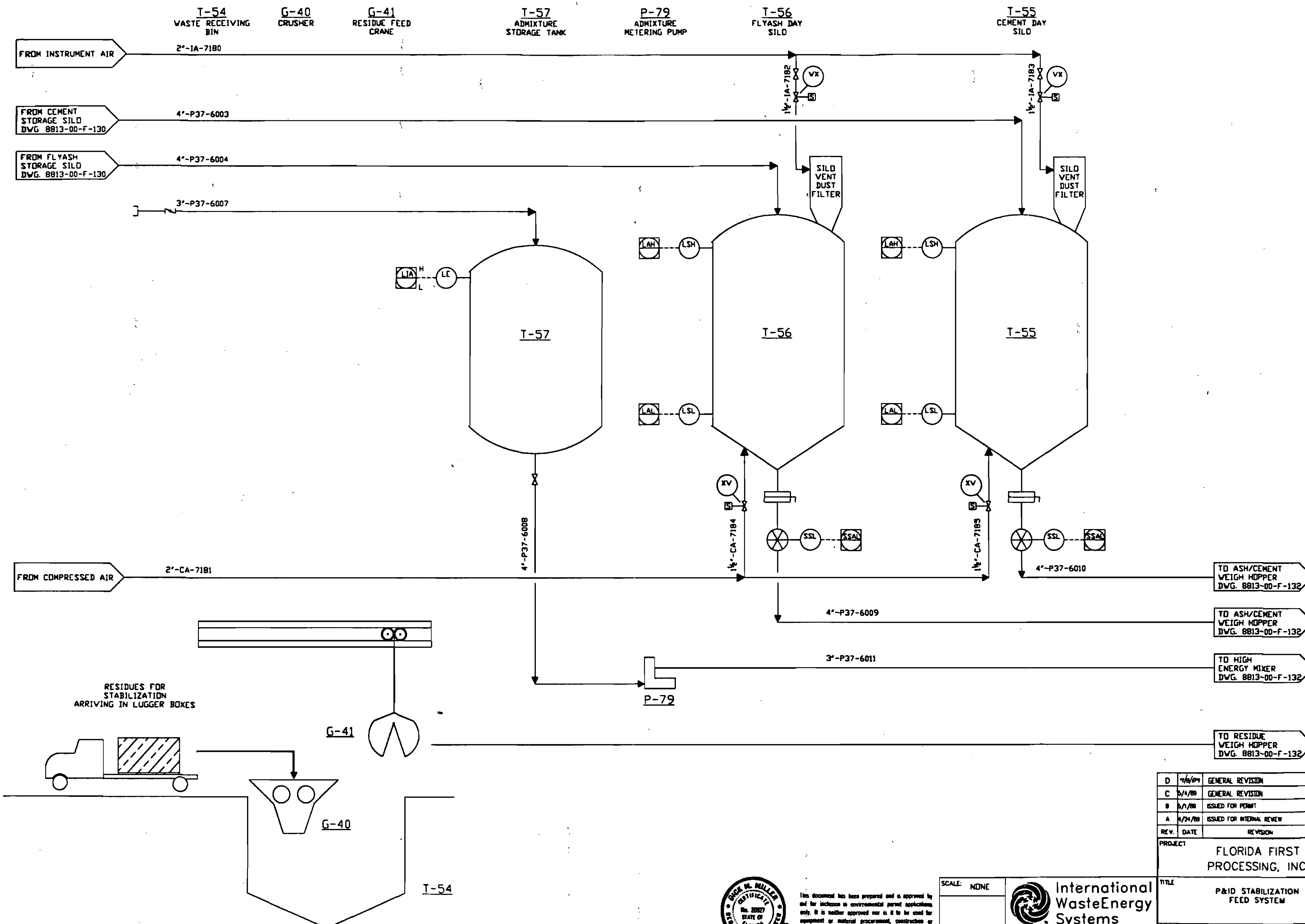
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
L.C.D	4/24/89			8813-00-F-130	C
CHKD	DATE		DATE		

8813F130

C-1



REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.E.N.	
C	5/4/89	GENERAL REVISION	L.C.D	L.D.C.
B	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
A	4/24/89	ISSUED FOR INTERNAL REVIEW	L.C.D	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID STABILIZATION FEED SYSTEM

DRAWN	DATE	APP'D	DATE	DRAWING NO.	REV.
L.C.D	4/24/89			8813-00-F-131	D
CHKD	DATE		DATE		

SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

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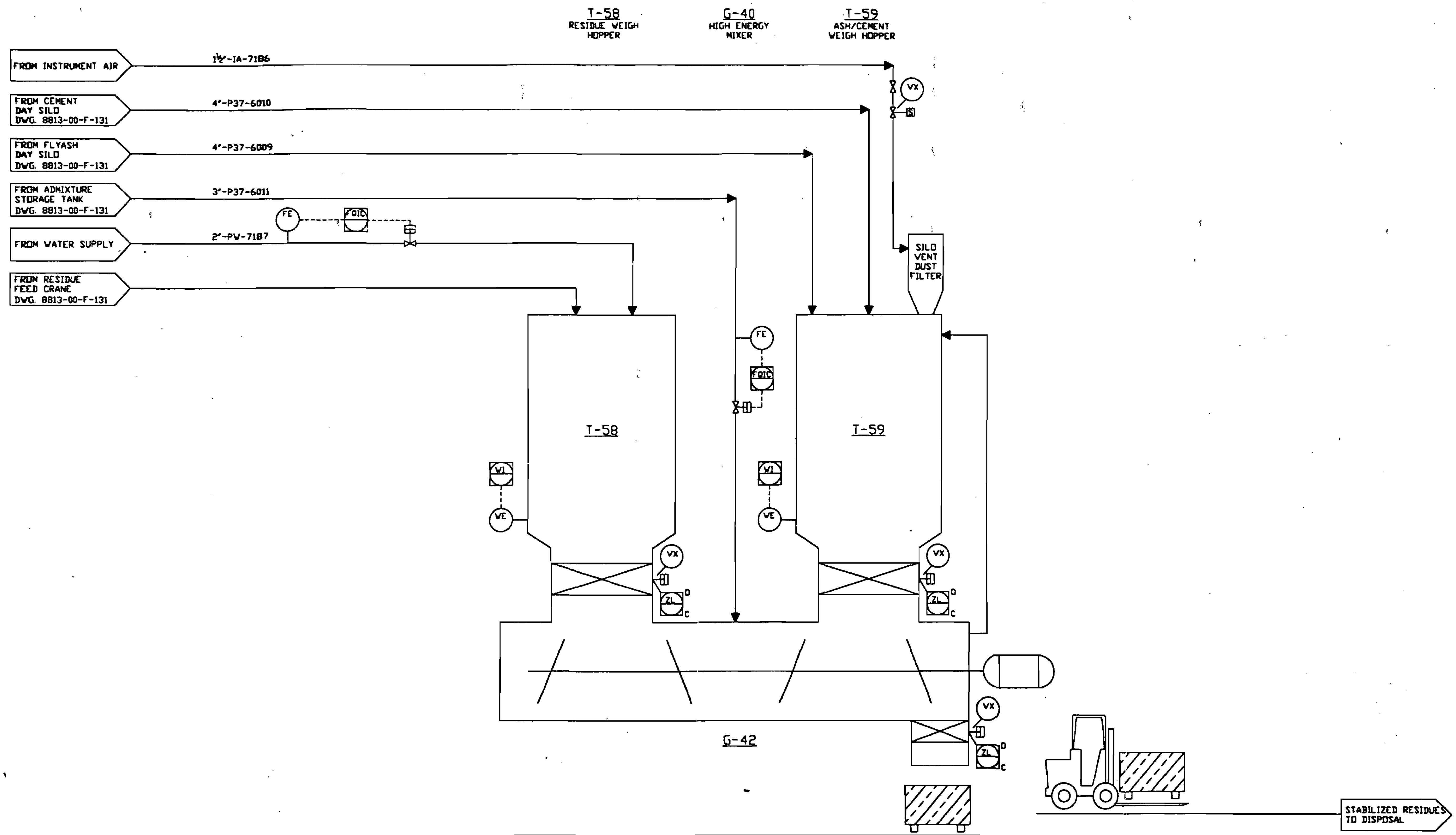
9/25/89

09/05/89

8813F131



REV.	DATE	REVISION	BY	CHKD
D	9/6/89	GENERAL REVISION	J.E.N.	
C	5/1/89	GENERAL REVISION	L.C.D.	L.D.C.
B	5/1/89	ISSUED FOR PERMIT	L.C.D.	L.D.C.
A	4/24/89	ISSUED FOR INTERNAL REVIEW	L.C.D.	L.D.C.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
P&ID STABILIZATION MIXING SYSTEM

DICK M. MILLER CERTIFICATE No. 20827 STATE OF FLORIDA REGISTERED ENGINEER

9/26/89

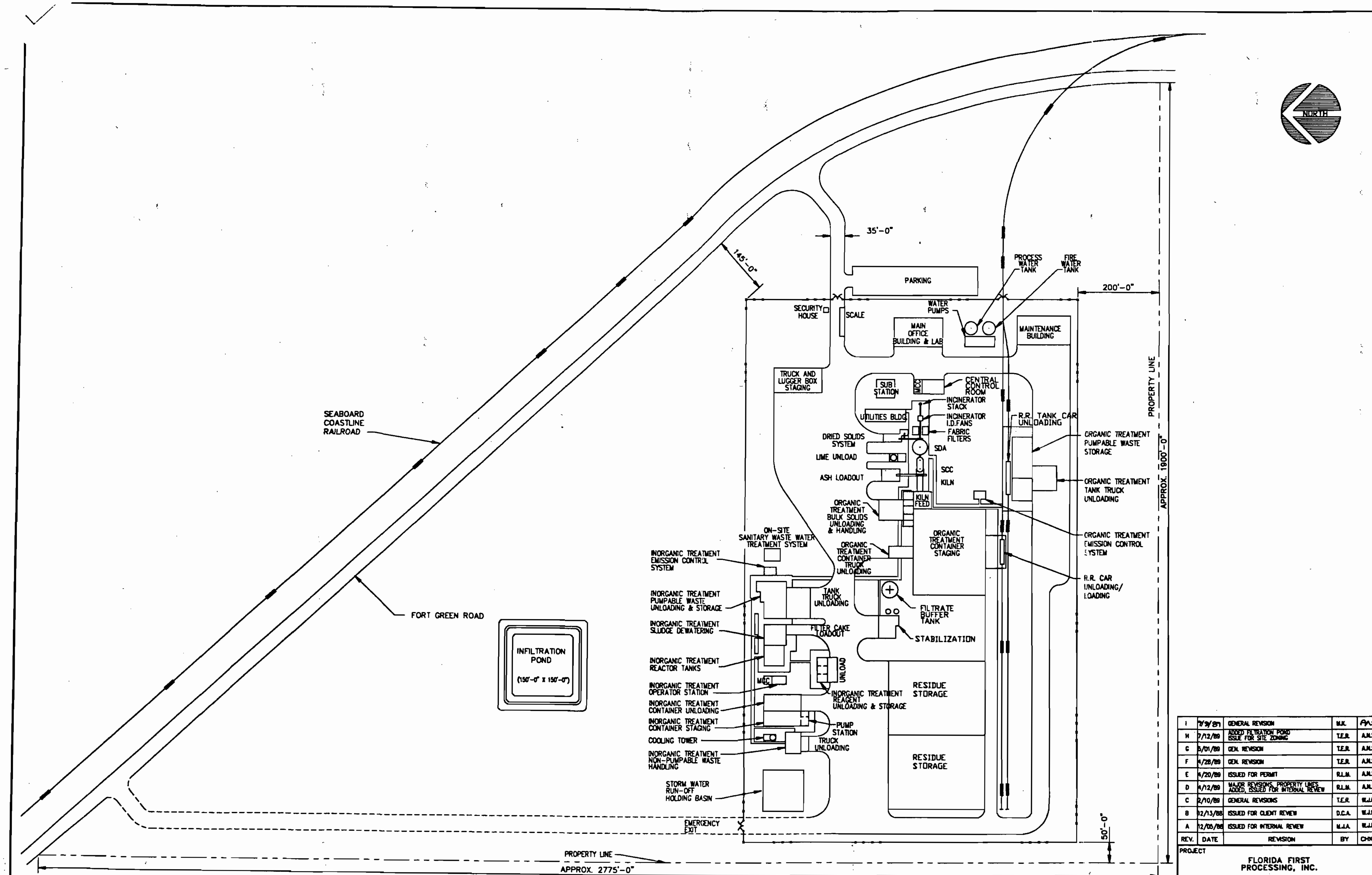
SCALE: NONE

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
L.C.D.	4/24/89			8813-00-F-132	D
CHKD	DATE		DATE		

8813F132

D-2



DICK M. MILLER · CERTIFICATE No. 20927 · STATE OF FLORIDA · REGISTERED ENGINEER

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Dick M. Miller 9/25/89

0 20 100 200 400

SCALE

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

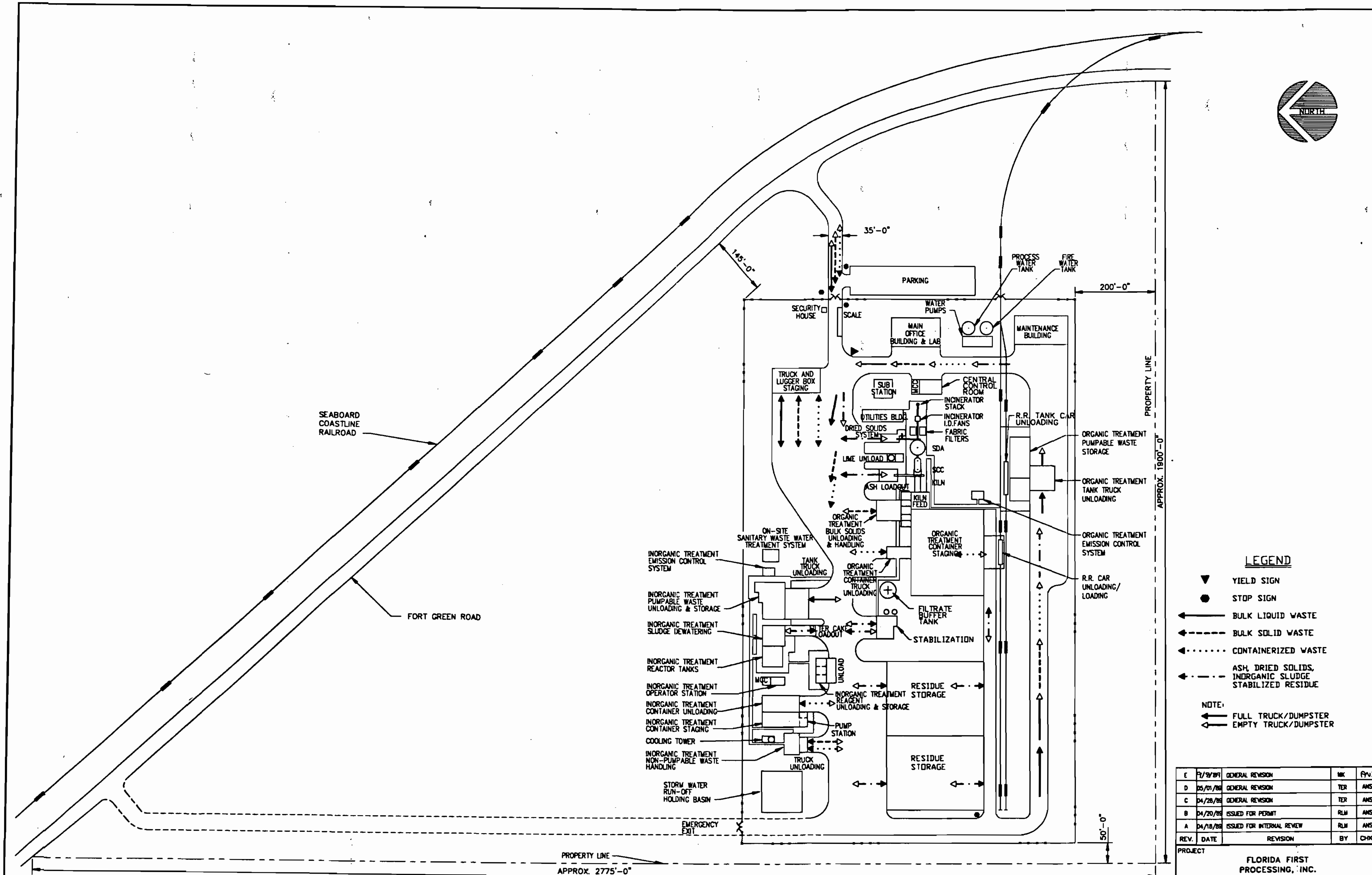
REV.	DATE	REVISION	BY	CHKD
I	7/9/89	GENERAL REVISION	M.K.	ANS
H	7/12/89	ADDED FILTRATION POND ISSUE FOR SITE ZONING	T.E.R.	A.N.S.
G	5/01/89	GEN. REVISION	T.E.R.	A.N.S.
F	4/28/89	GEN. REVISION	T.E.R.	A.N.S.
E	4/20/89	ISSUED FOR PERMIT	R.L.M.	A.N.S.
D	4/12/89	MAJOR REVISIONS, PROPERTY LINES ADDED, ISSUED FOR INTERNAL REVIEW	R.L.M.	A.N.S.
C	2/10/89	GENERAL REVISIONS	T.E.R.	W.J.H.
B	12/13/88	ISSUED FOR CLIENT REVIEW	D.C.A.	W.J.H.
A	12/05/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	W.J.H.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
SITE PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
KJK	12/07/88				
CHKD	DATE		DATE	8813-00-M-001	I

FILE NAME: 8813M001.DWG
9/7/89
I-2



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
E	9/9/89	GENERAL REVISION	MK	ANS
D	05/01/89	GENERAL REVISION	TER	ANS
C	04/28/89	GENERAL REVISION	TER	ANS
B	04/20/89	ISSUED FOR PERMIT	RLM	ANS
A	04/18/89	ISSUED FOR INTERNAL REVIEW	RLM	ANS

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: TRAFFIC ROUTE PLAN

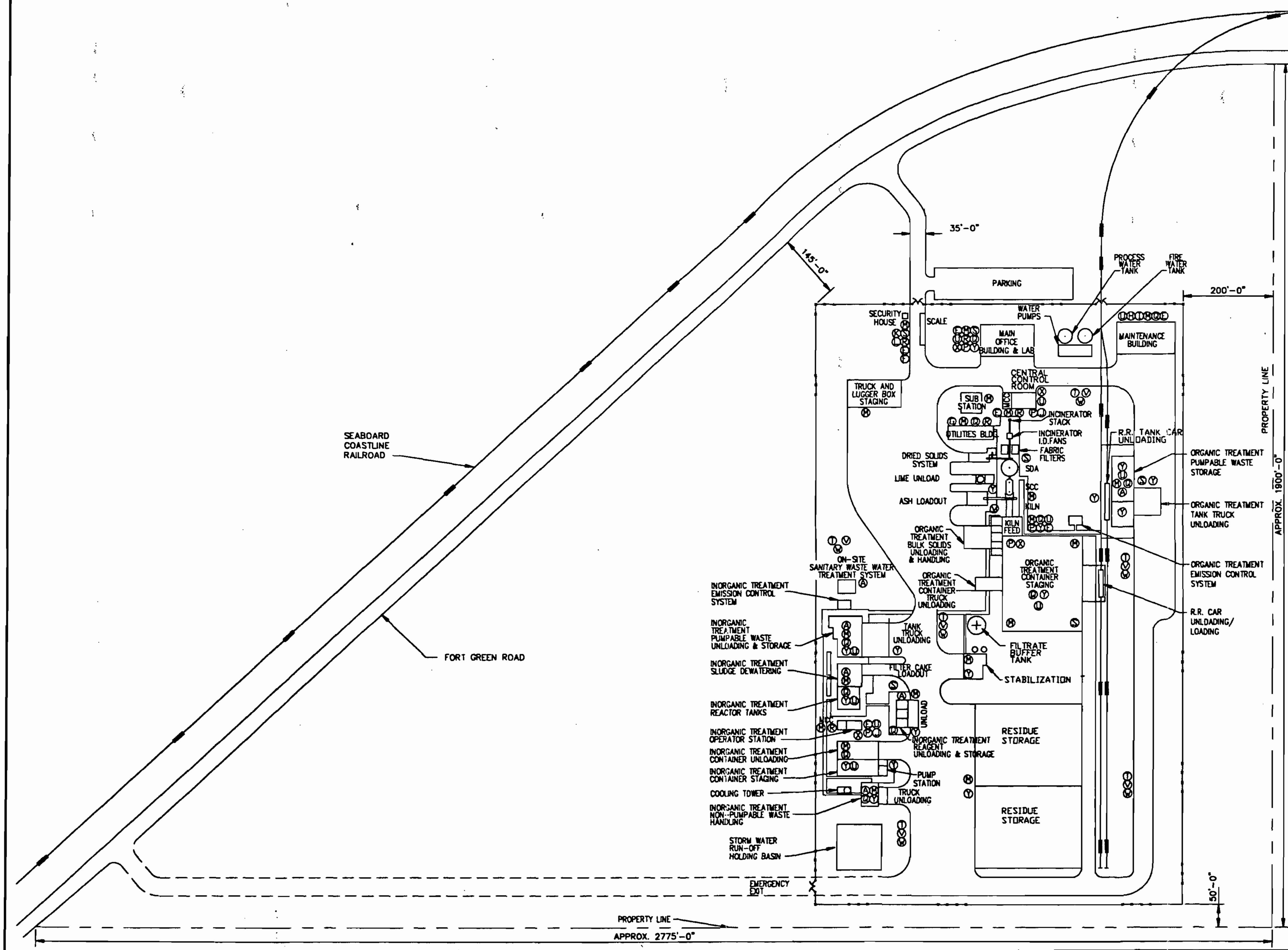
SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RLM	4/18/89			8813-00-M-002	E
CHKD	DATE		DATE		

E-1

DATE PLOTTED: 9/26/89



EMERGENCY EQUIPMENT LOCATION LEGEND

- Ⓐ SPILL EQUIPMENT
- Ⓑ NOT USED
- Ⓒ NOT USED
- Ⓓ NOT USED
- Ⓔ TELEPHONES
- Ⓕ PLANT-WIDE PUBLIC ADDRESS SYSTEM
- Ⓖ GENERATOR
- Ⓗ DUMPSTER TRUCKS
- Ⓘ FORKLIFT TRUCKS
- Ⓙ HALON FIRE SUPRESSION
- Ⓚ PORTABLE AIR HORN
- Ⓛ PORTABLE PUBLIC ADDRESS SYSTEM
- Ⓜ FIRE EXTINGUISHERS
- Ⓝ NOT USED
- Ⓞ NOT USED
- Ⓟ SCBA (SELF CONTAINED BREATHING APPARATUS)
- Ⓠ SPRINKLER SYSTEMS
- Ⓡ RADIOS
- Ⓢ FIRE CALL BOXES
- Ⓣ HOSE HOUSE
- Ⓤ FIRST AID SUPPLIES
- Ⓥ PERMANENT FIRE MONITOR
- Ⓦ FIRE HYDRANT
- Ⓧ PROTECTIVE CLOTHING AND EQUIPMENT
- Ⓨ EYEWASH & SAFETY SHOWER

DICK M. MILLER CERTIFICATE No. 20627 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

0 20 100 200 400

SCALE

SCALE: NOTED

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
E	9/8/95	GENERAL REVISION	MK	AWS
D	5/01/89	GENERAL REVISION	TER	AMS
C	4/28/89	GENERAL REVISION	TER	AMS
B	4/20/89	ISSUED FOR PERMIT	RLM	AMS
A	4/18/89	ISSUED FOR INTERNAL REVIEW	RLM	AMS

PROJECT: FLORIDA FIRST PROCESSING, INC.

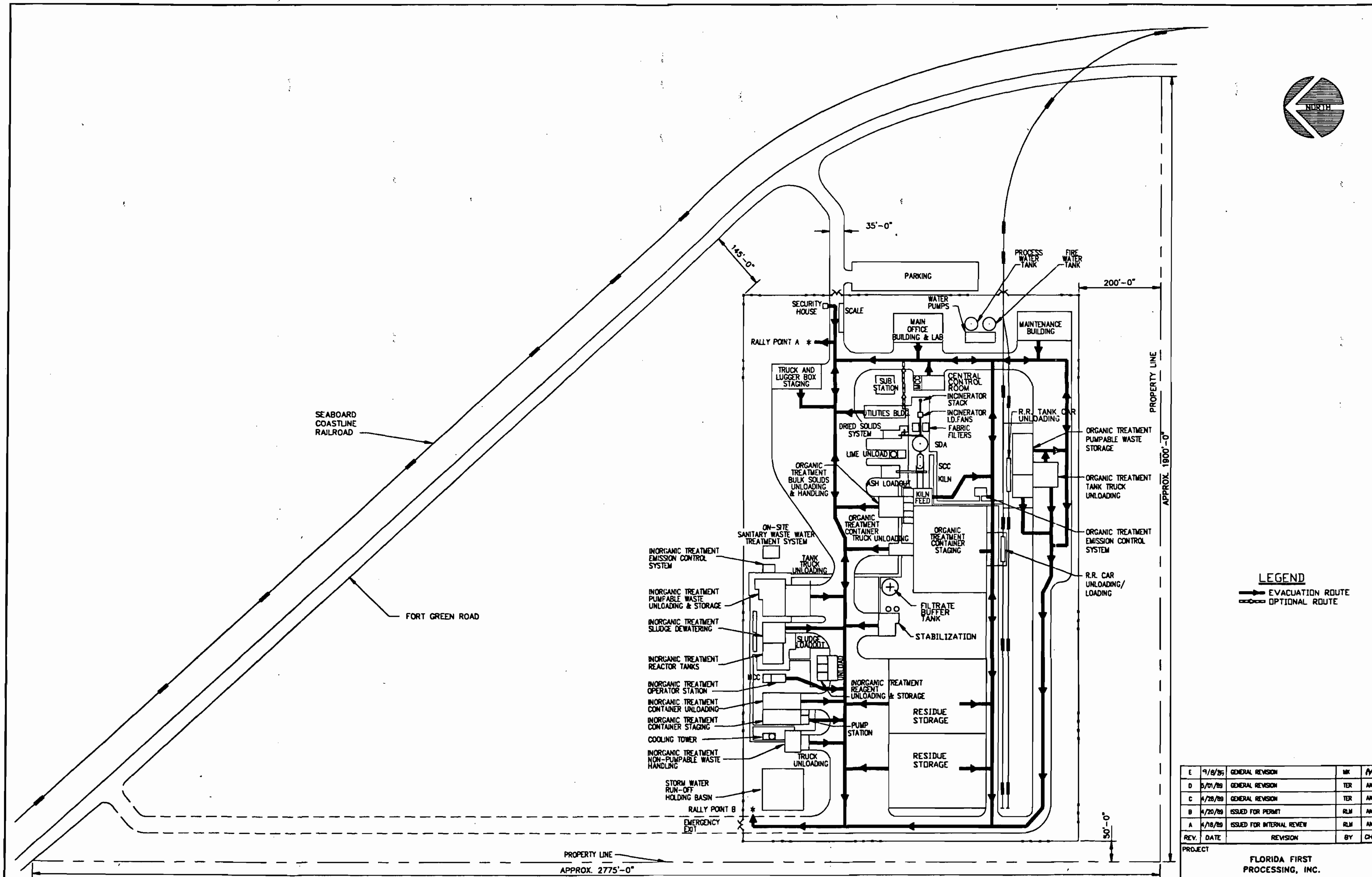
TITLE: EMERGENCY EQUIPMENT & COMMUNICATION PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RLM	4/18/89			8813-00-M-003	E
CHKD	DATE		DATE		

E-1

FILE NAME: 8813003.DWG

DATE PLOTTED: 9/08/89



REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	MK	MS
D	5/01/89	GENERAL REVISION	TER	AMS
C	4/28/89	GENERAL REVISION	TER	AMS
B	4/20/89	ISSUED FOR PERMIT	RLM	AMS
A	4/18/89	ISSUED FOR INTERNAL REVIEW	RLM	AMS

PROJECT: FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

0 20 100 200 400

SCALE

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

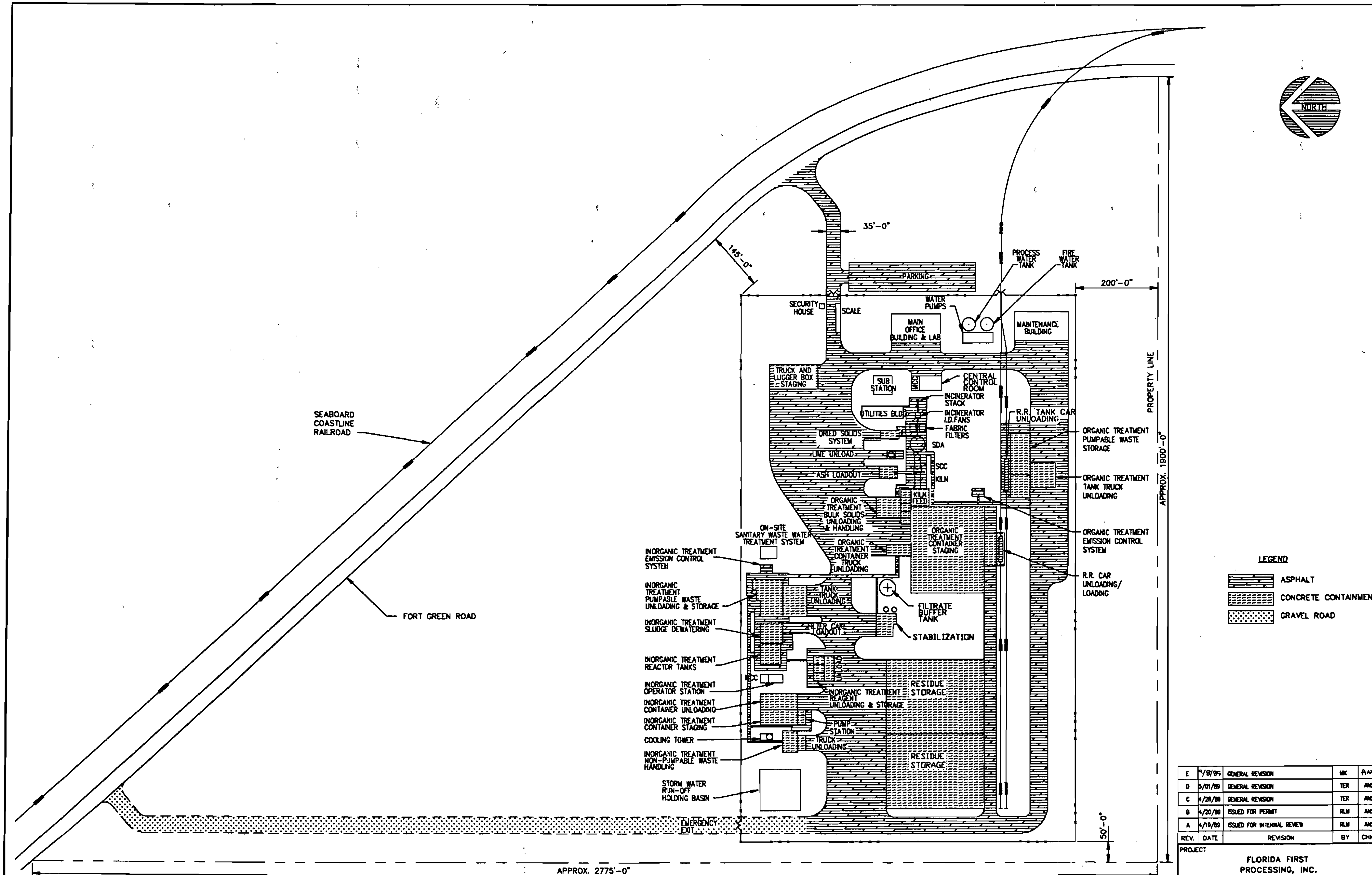
TITLE: EVACUATION PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RLM	4/18/89			8813-00-M-004	E
CHKD	DATE		DATE		

E-2

FILE NAME: 8813M004.DWG

DATE PLOTTED: 9/08/89



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Dick M. Miller 9/26/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	MK	ANS
D	5/01/89	GENERAL REVISION	TER	ANS
C	4/28/89	GENERAL REVISION	TER	ANS
B	4/20/89	ISSUED FOR PERMIT	RLM	ANS
A	4/19/89	ISSUED FOR INTERNAL REVIEW	RLM	ANS

PROJECT
FLORIDA FIRST PROCESSING, INC.

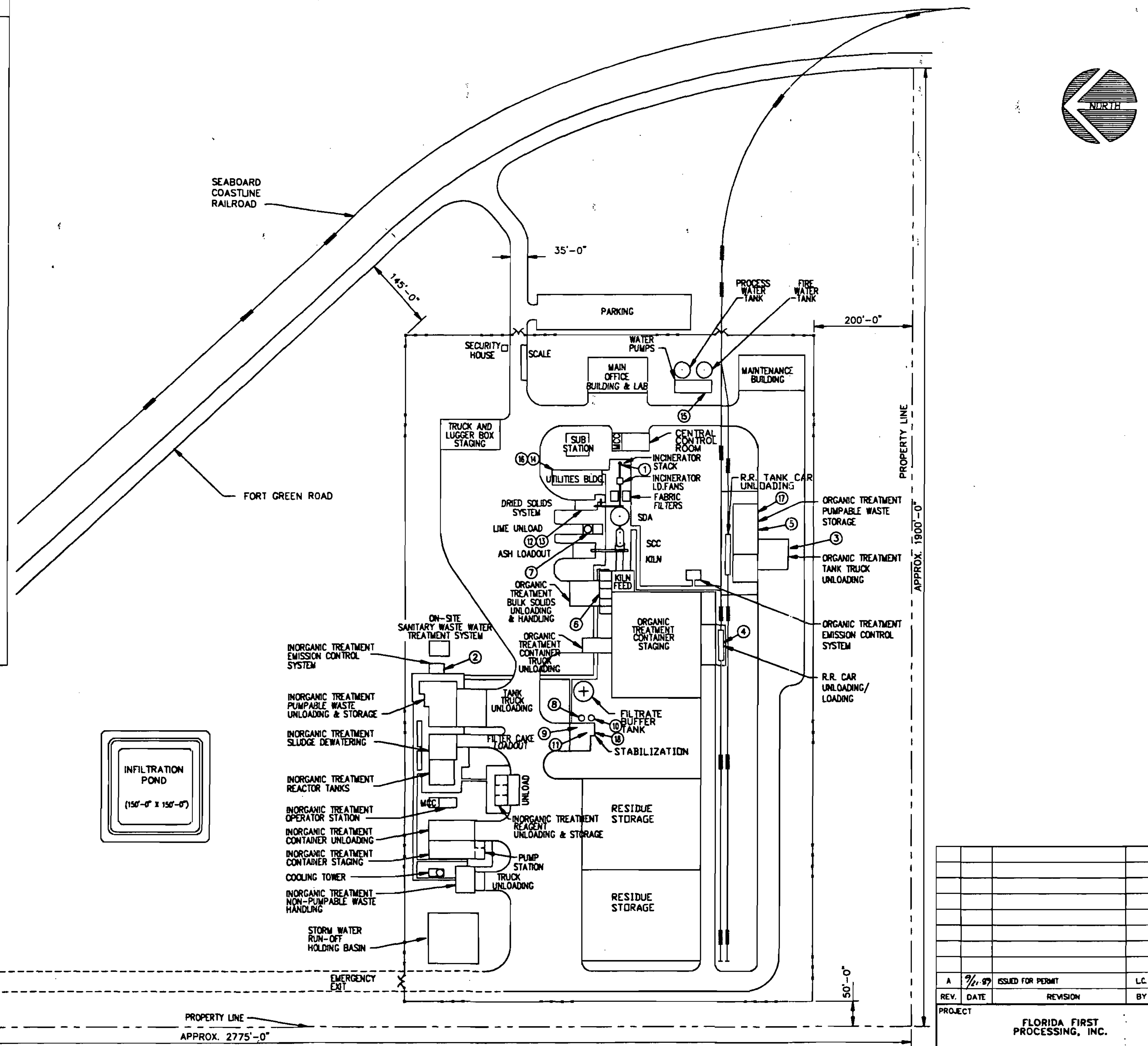
TITLE
PAVING PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RLM	04/19/89			8813-00-M-005	E
CHKD	DATE		DATE		

FILE NAME: 8813M005.DWG
DATE PLOTTED: 9/8/89

E-2

Item #	Source(s)	Control Device	Emission Point	Applicable Air Permit
1	Hazardous Waste Incinerator	SDA/Fabric Filter	Incinerator Stack	Hazardous Waste Incinerator and Associated Storage/Handling Units
2	Inorganic Waste Treatment System Reagent Storage Area	Caustic Wet Scrubber	Scrubber Stack	Inorganic Waste Treatment System
3	Organic Liquid Tank Truck Unloading Area	Tank Truck Unloading Area Carbon Adsorber	Carbon Adsorber Vent	Tank Truck Unloading Area
4	Organic Liquid Rail Car Unloading Area	Rail Car Unloading Area Carbon Adsorber	Carbon Adsorber Vent	Rail Car Unloading Area
5	Organic Liquid Storage Tanks	Rotary Kiln/SCC or Organic Treatment Emission Control System	Incinerator Stack or Organic Treatment Emission Control System	Organic Liquid Storage Tanks
6	Organic Solids Storage Area	Rotary Kiln/SCC or Organic Treatment Emission Control System	Incinerator Stack or Organic Treatment Emission Control System	Organic Solids Storage Area
7	Lime Storage Silo	Lime Storage Silo Fabric Filter	Fabric Filter Vent	Lime Storage Silo
8	Cement Storage Silo	Cement Storage Silo Fabric Filter	Fabric Filter Vent	Cement Storage Silo
9	Cement Day Silo	Cement Day Silo Fabric Filter	Fabric Filter Vent	Cement Day Silo
10	Flyash Storage Silo	Flyash Storage Silo Fabric Filter	Fabric Filter Vent	Flyash Storage Silo
11	Flyash Day Silo	Flyash Day Silo Fabric Filter	Fabric Filter Vent	Flyash Day Silo
12	Recycle Solids Storage Silo	Recycle Solids Storage Silo Fabric Filter	Fabric Filter Vent	Recycle Solids Storage Silo
13	Dry Solids Storage Silo	Dry Solids Storage Silo Fabric Filter	Fabric Filter Vent	Dry Solids Storage Silo
14	Steam Boiler	Uncontrolled	Boiler Stack	Steam Boiler
15	Emergency Firewater Pump	Uncontrolled	Diesel Engine Exhaust Pipe	Backup Diesel Powered Firewater Pump
16	Emergency Power Generator	Uncontrolled	Diesel Engine Exhaust Pipe	Backup Diesel Generator
17	Fuel Oil Tank	Uncontrolled	Tank Vent	#2 Fuel Oil Storage Tank
18	Stabilization Mixer and Flyash/Cement Weigh Hopper	Weigh Hopper Fabric Filter	Fabric Filter Vent	Stabilization Mixer and Flyash/Cement Weigh Hopper



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

0 20 100 200 400

SCALE

REV.	DATE	REVISION	BY	CHKD
A	9/21/89	ISSUED FOR PERMIT	LC	

PROJECT: FLORIDA FIRST PROCESSING, INC.

SCALE:

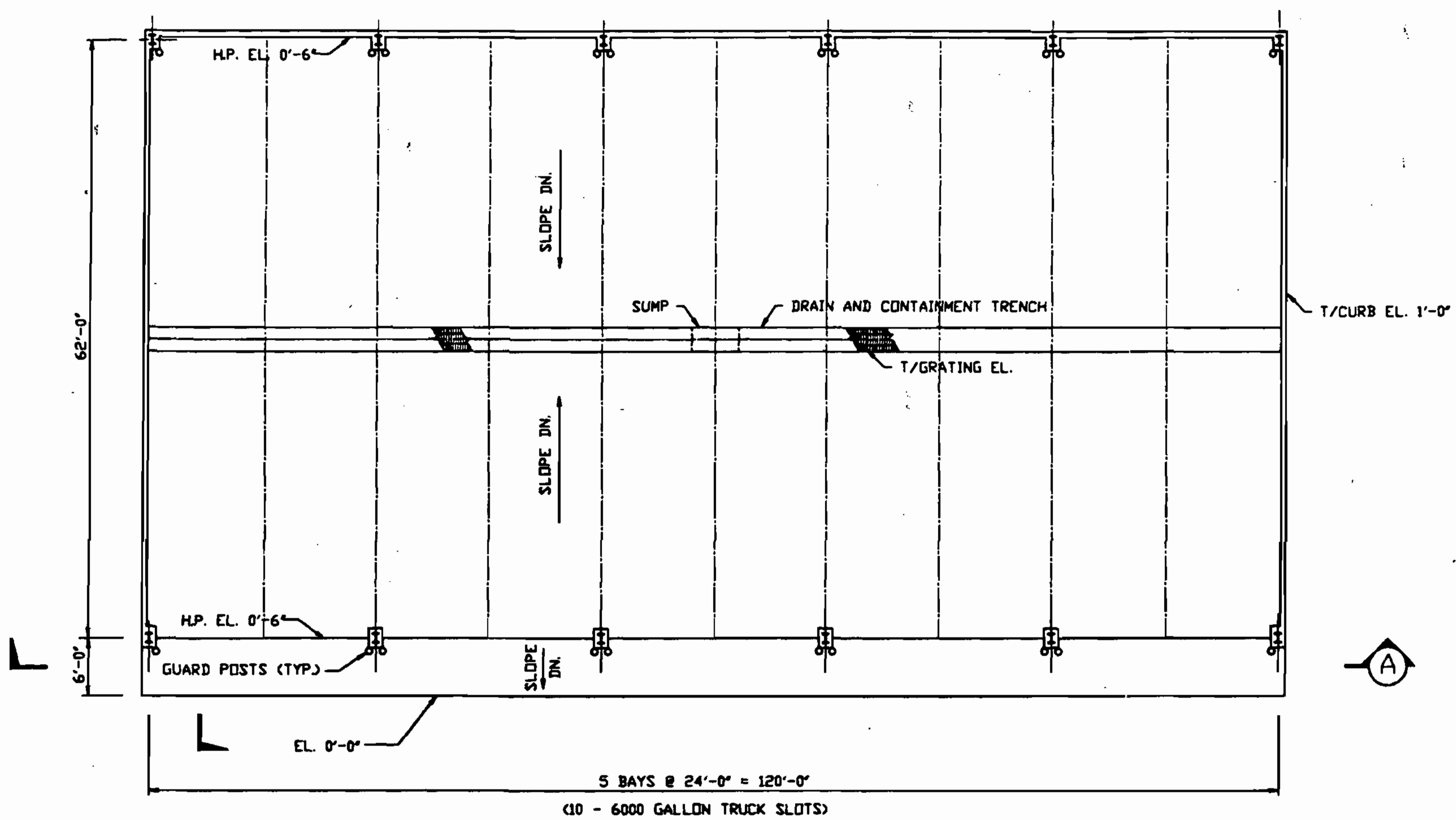
International WasteEnergy Systems

ST. LOUIS, MO.

TITLE: AIR EMISSION POINT SOURCES AND EMISSION CONTROL SYSTEMS PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
LC				B813-00-M-006	A
CHKD	DATE		DATE		

A-1



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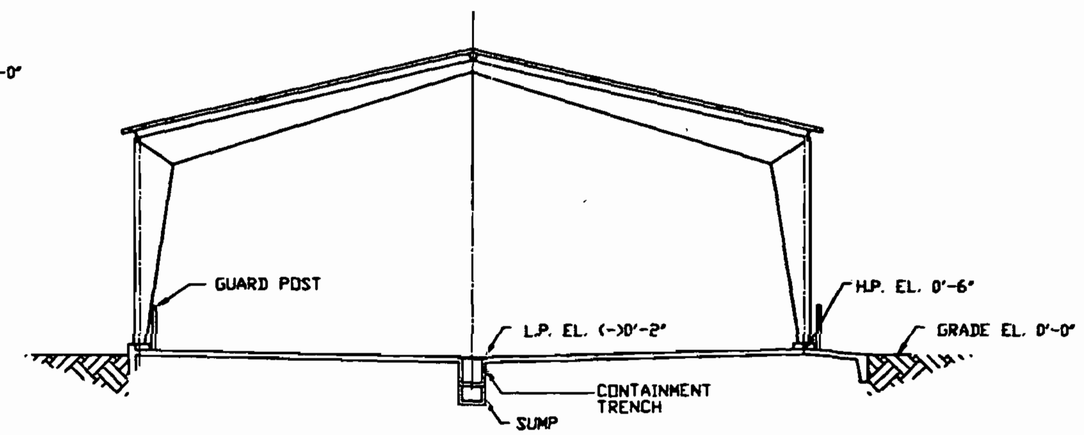

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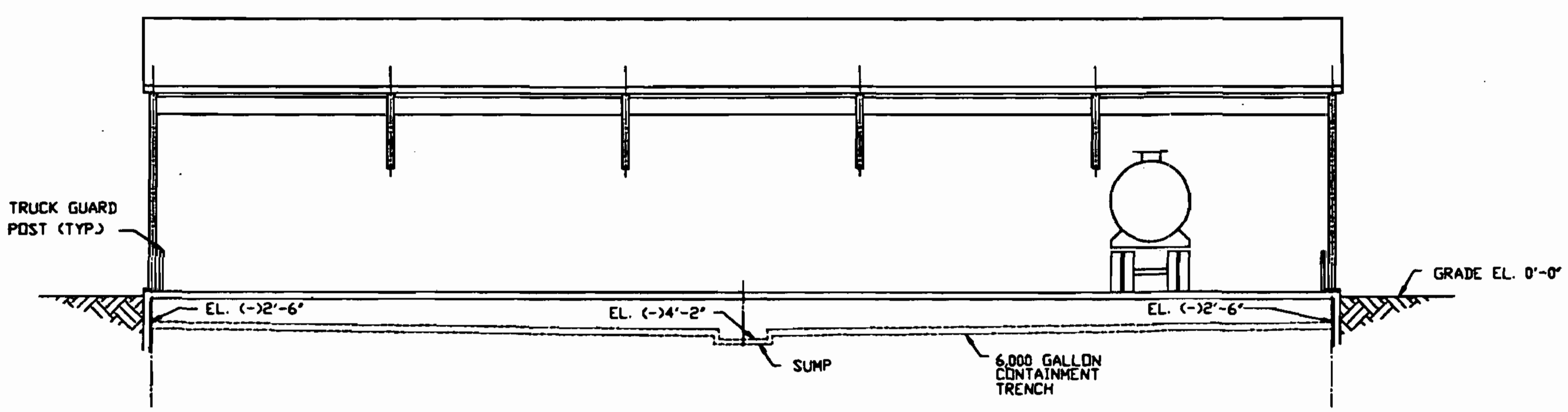

SECTION (A)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	M.K.	WJH
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/20/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

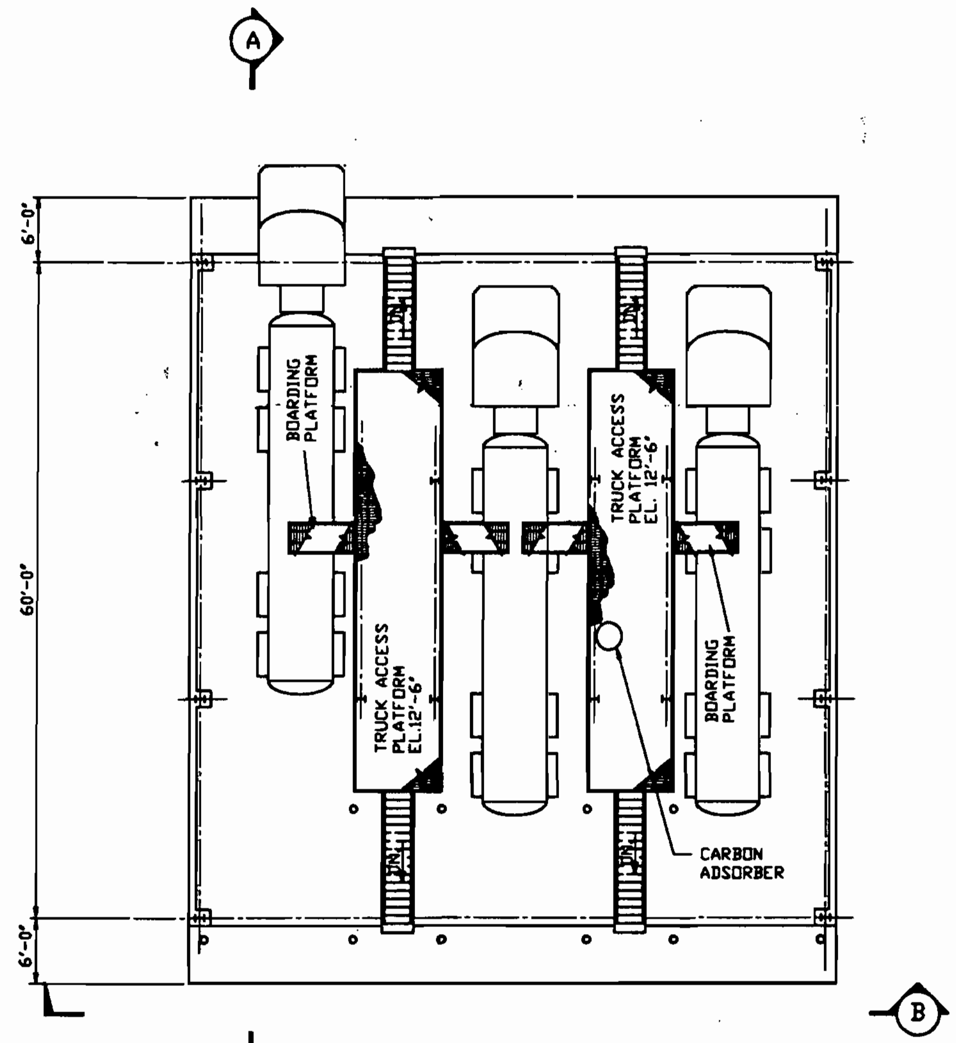
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
GENERAL ARRANGEMENT
TRUCK AND LUGGER BOX STAGING
PLAN AND SECTIONS

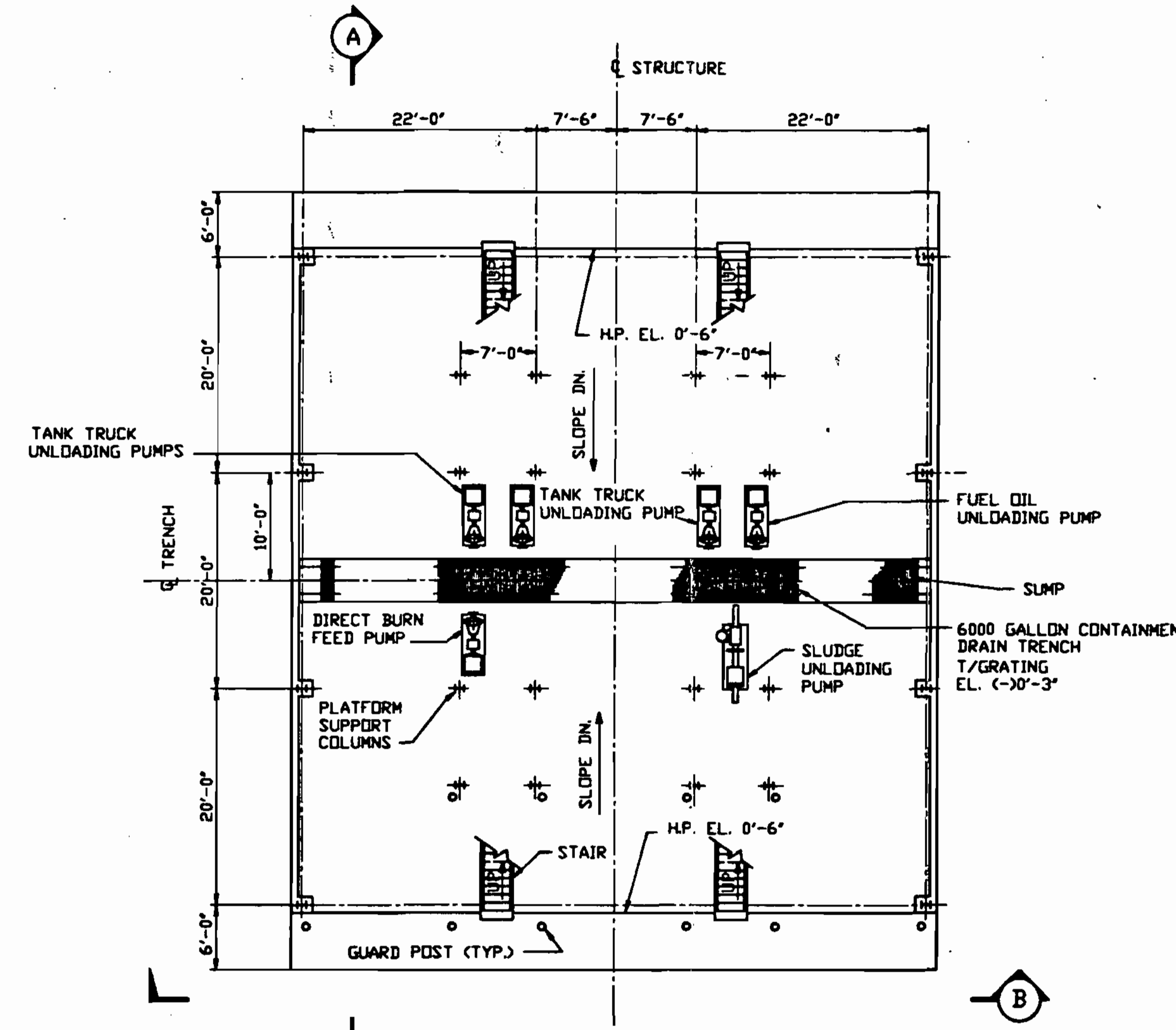
DRAWN M.K.	DATE 12/15/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-M-010	D

D-1

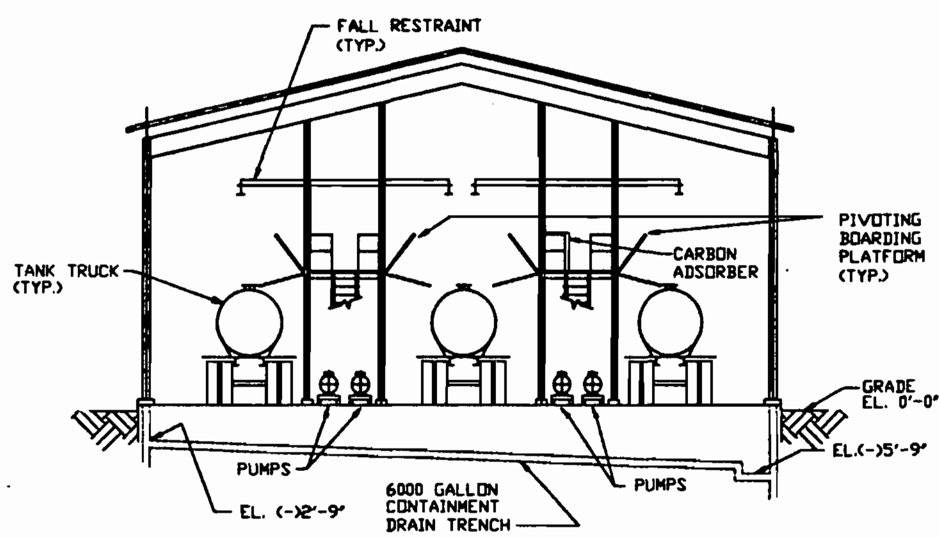
DATE PLOTTED: 9/7/89 FILE NAME: \8813\8813M010.DWG



UPPER PLAN



GROUND FLOOR PLAN



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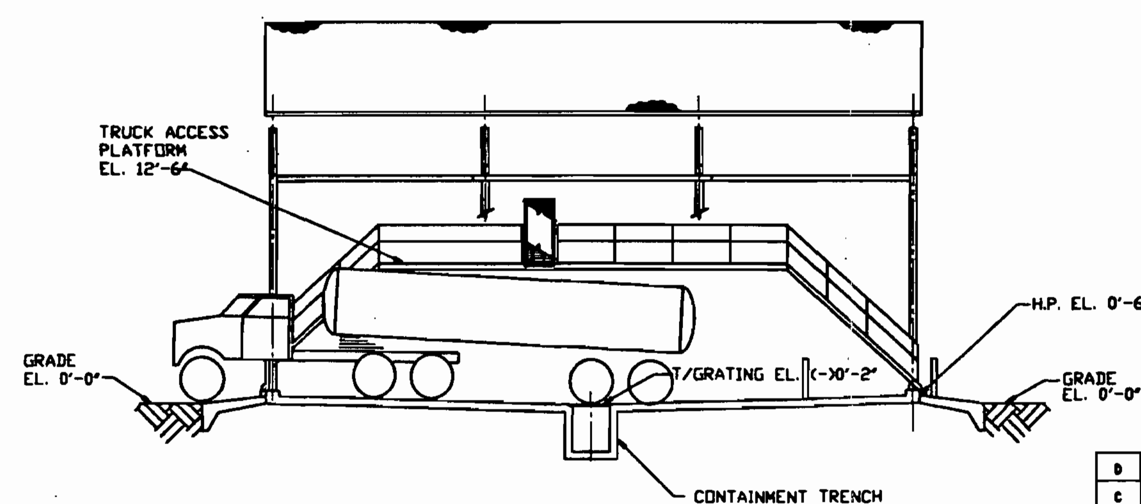

SECTION (A)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	M.K.	WJH
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	2/10/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/20/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
TANK TRUCK UNLOADING
PLANS & SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/16/88			8813-00-M-011	D
CHKD	DATE		DATE		

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

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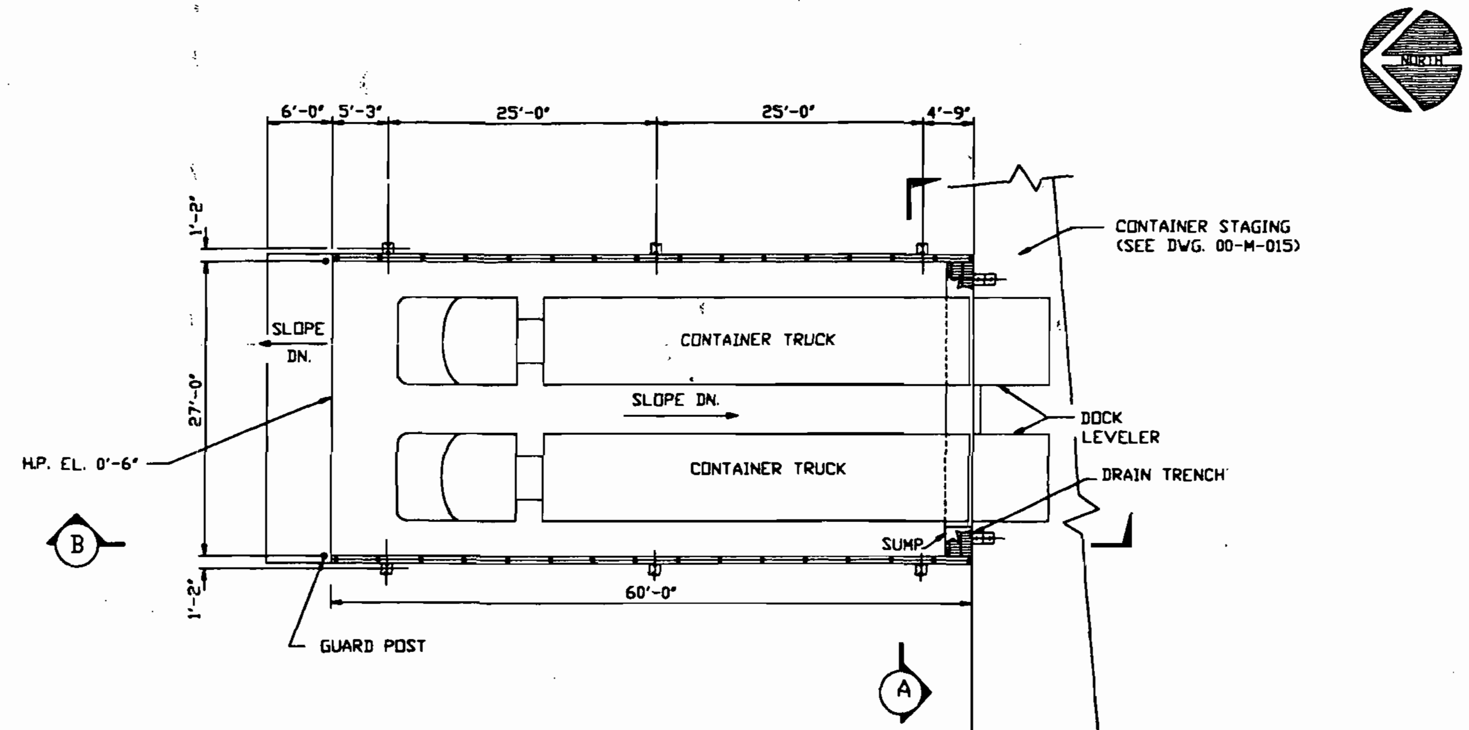
Dick M. Miller 9/25/89

FILE NAME: \8813\8813M011
DATE PLOTTED: 9/7/89

D-1



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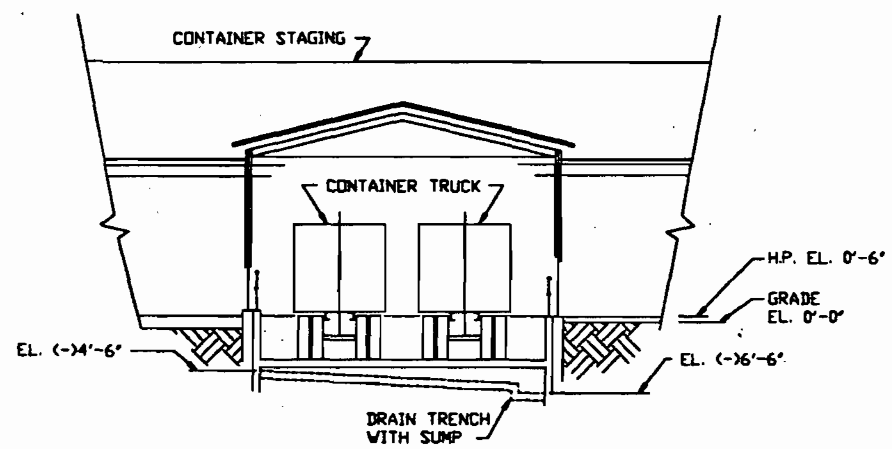

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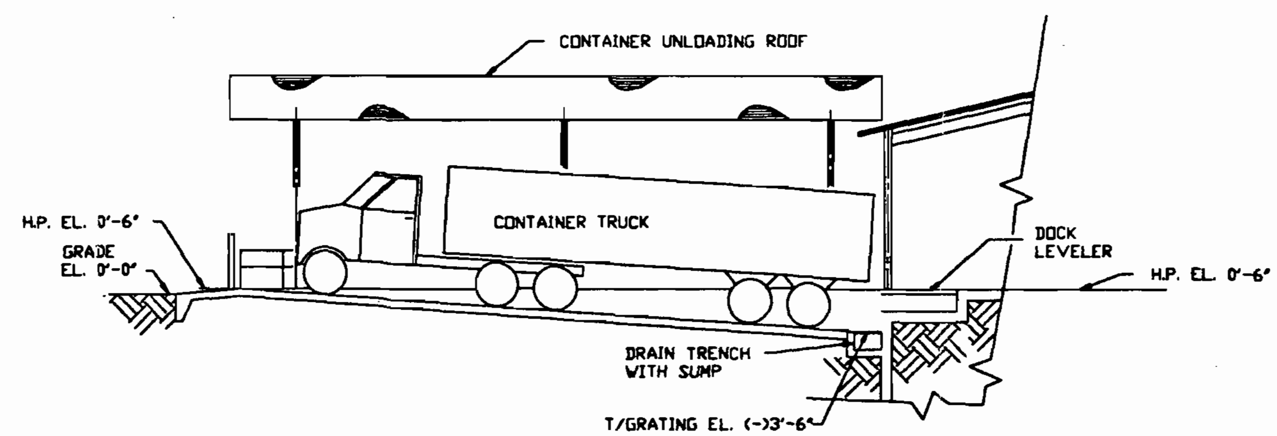

SECTION (B)

0 4' 8' 16'
SCALE

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
E	9/13/89	GENERAL REVISION	J.B.	WJH
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	W.J.H.
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	2/10/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/20/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
CONTAINER TRUCK UNLOADING
PLAN AND SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/14/88			8813-00-M-012	E
CHKD	DATE		DATE		

DATE PLOTTED: 9/13/89 FILE NAME: \8813\8813M012.DWG

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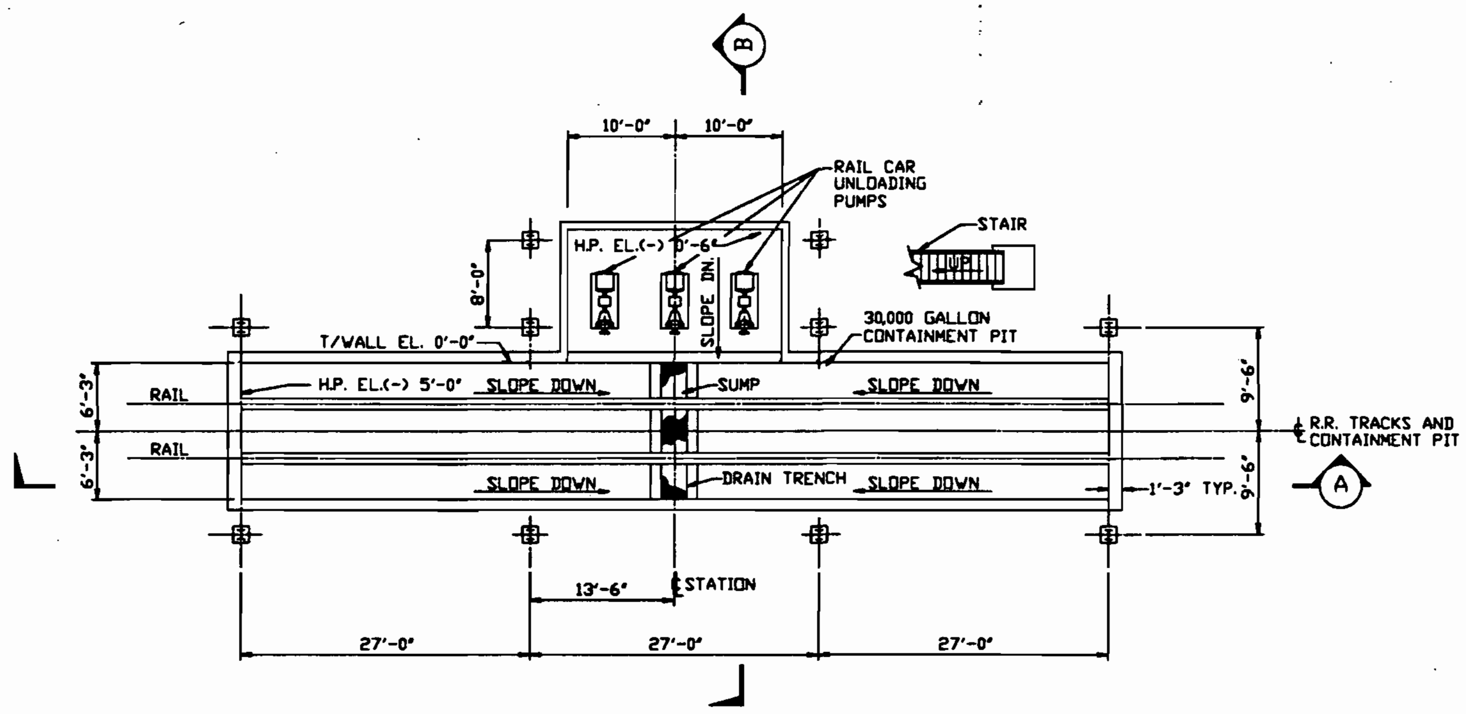

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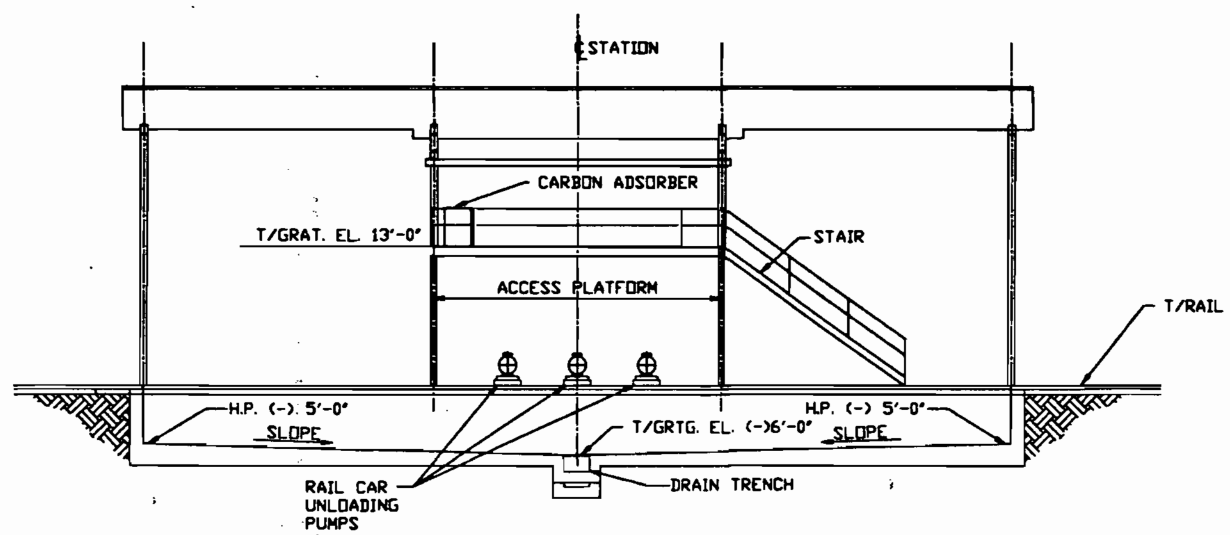
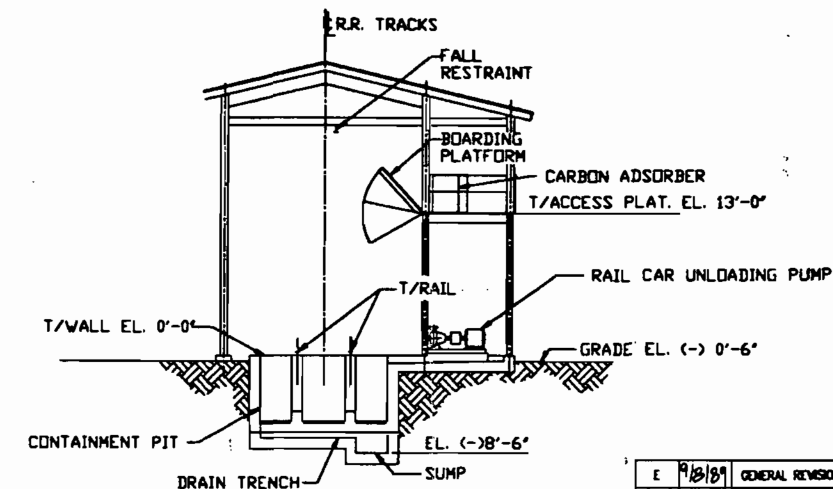


SECTION A



SECTION B

0 4' 8' 16'

SCALE

REV.	DATE	REVISION	BY	CHKD
E	9/13/89	GENERAL REVISION	J.B.	WJH
D	5/04/89	GENERAL REVISION	T.E.R.	W.J.H.
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	2/10/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	W.J.H.

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

PROJECT

FLORIDA FIRST PROCESSING, INC.

TITLE

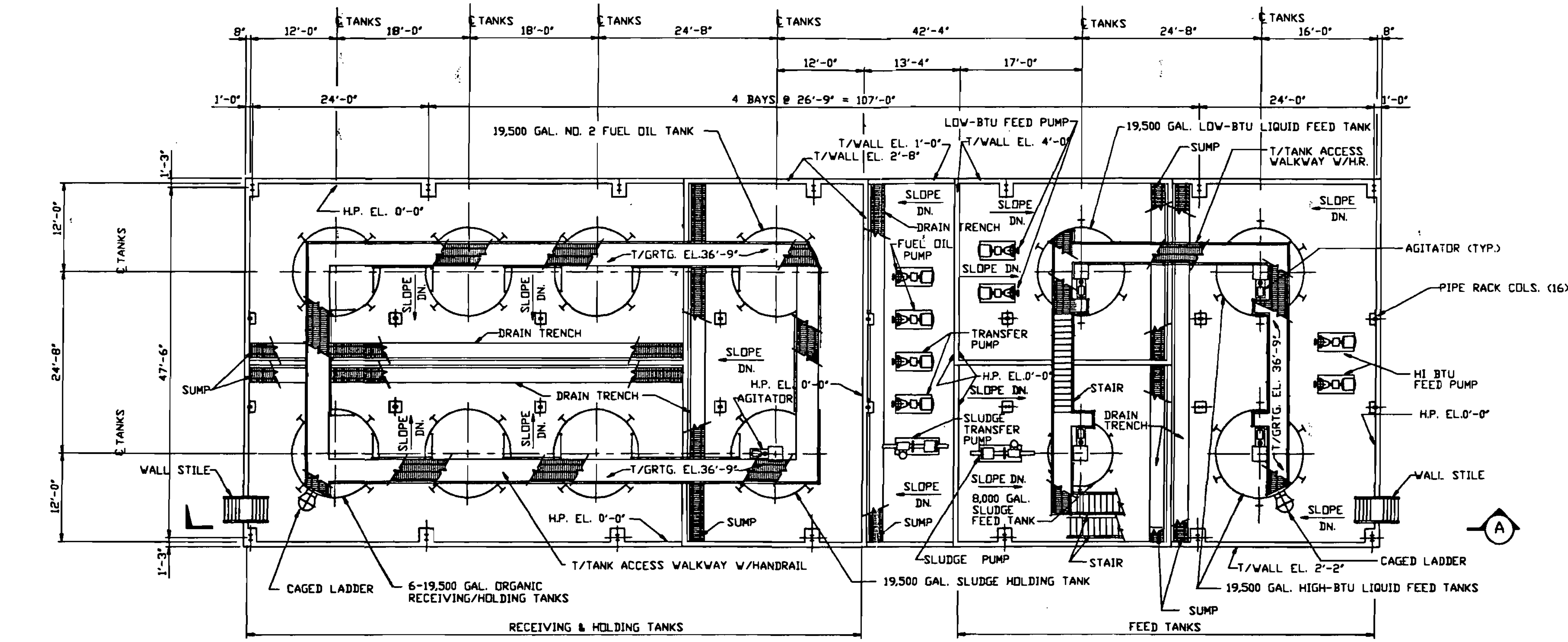
GENERAL ARRANGEMENT
RAILROAD TANK CAR UNLOADING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/21/88			8813-00-M-013	E
CHKD	DATE		DATE		

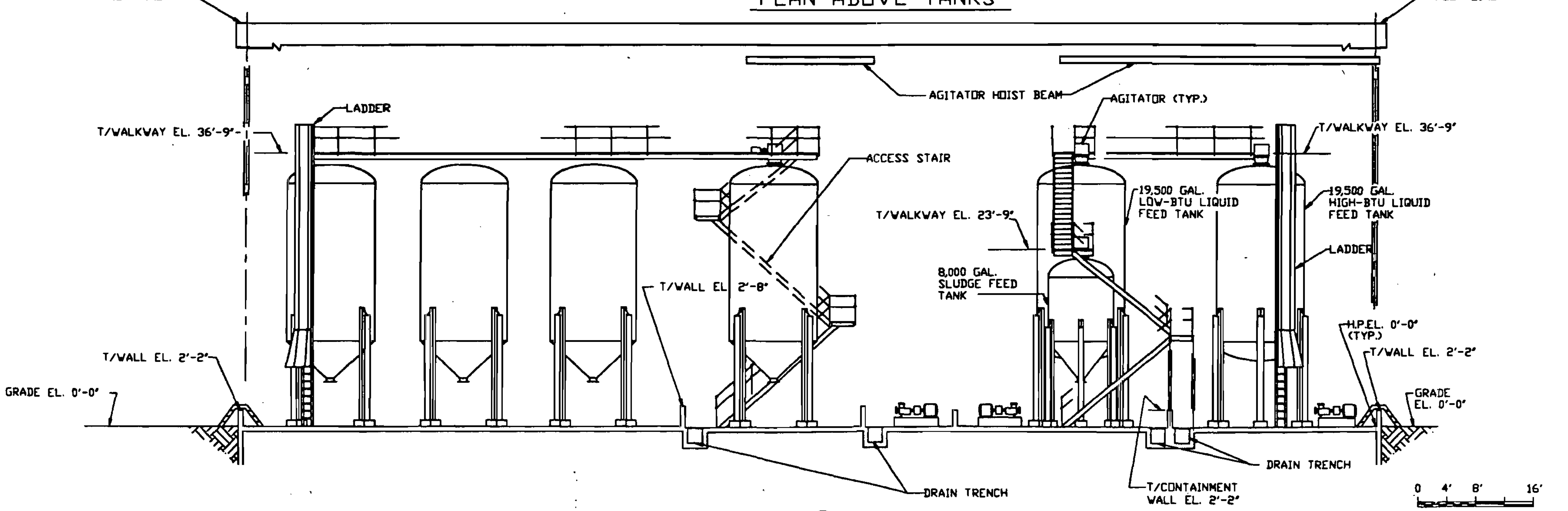
FILE NAME: \8813\8813M013.DWG

DATE PLOTTED: 9/18/89

E-1



PLAN ABOVE TANKS



SECTION (A)

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
F	9/22/89	GENERAL REVISION	A.S.	W.J.H.
E	9/8/89	GENERAL REVISION	J.B.	W.J.H.
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	W.J.H.
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	2/10/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/22/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT

FLORIDA FIRST PROCESSING, INC.

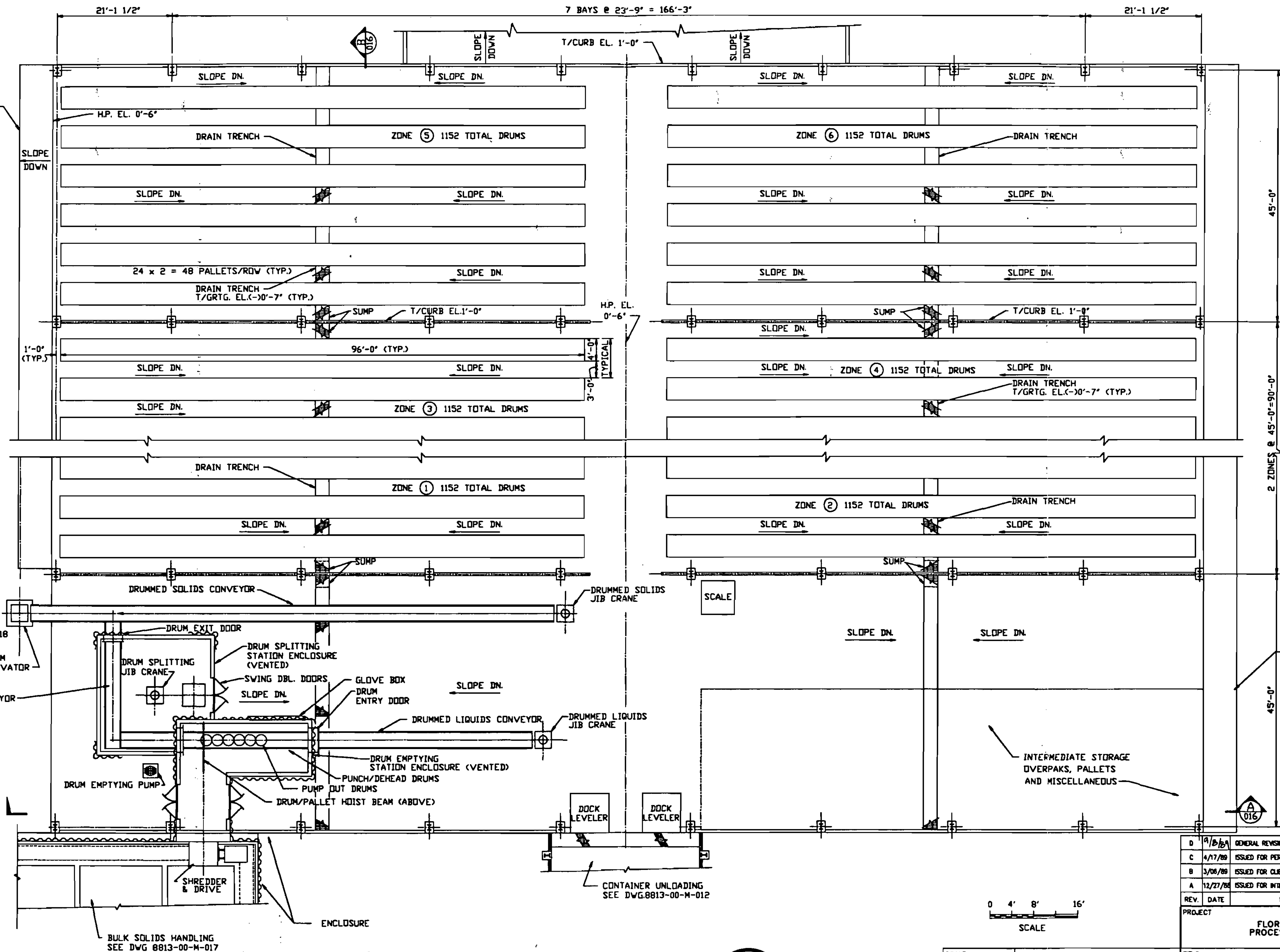
TITLE

GENERAL ARRANGEMENT
ORGANIC TREATMENT
PUMPABLE WASTE STORAGE
PLAN AND SECTION

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/20/88			8813-00-M-014	F
CHKD	DATE		DATE		

FILE NAME: \8813\8813M014.DWG

F-1



REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	W.J.H.
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/06/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/27/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT CONTAINER STAGING PLAN

DICK M. MILLER CERTIFICATE No. 35927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

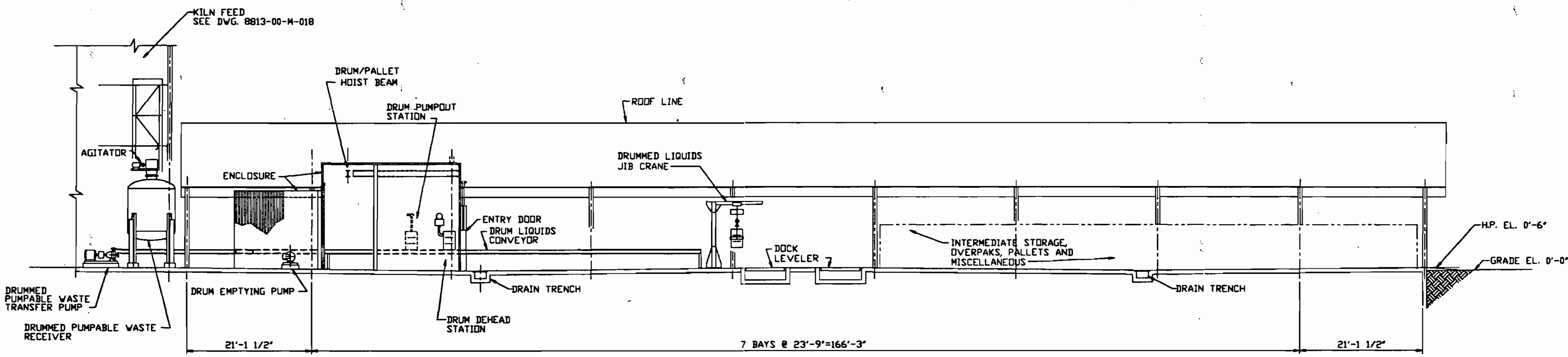
SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

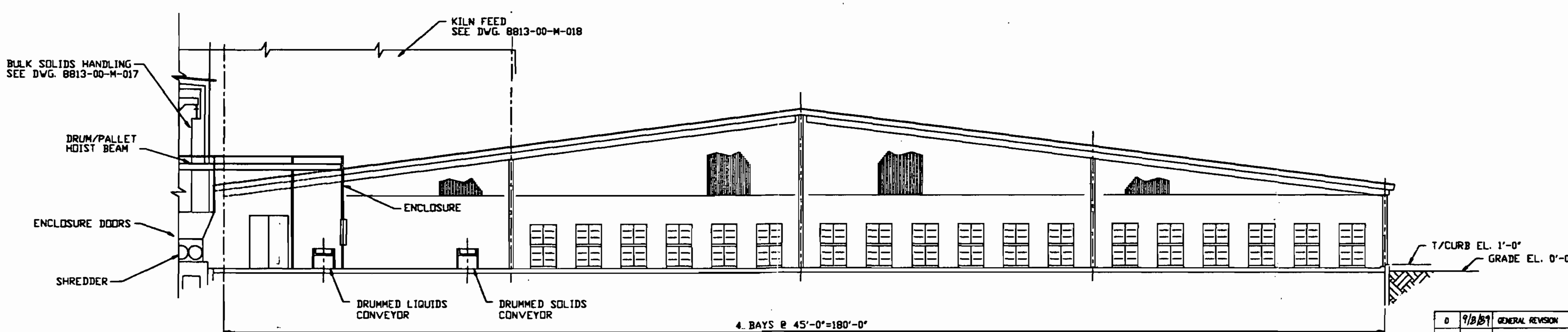
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/22/89			8813-00-M-015	D
CHKD	DATE		DATE		

FILE NAME: 881300015.DWG
DATE PLOTTED: 9/8/89

D-1



SECTION A / 015



SECTION B / 015

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	WJH
C	4/17/89	ISSUED FOR PERMIT	M.K.	WJH
B	03/03/89	ISSUED FOR CLIENT REVIEW	RLM	WJH
A	12/21/88	ISSUED FOR INTERNAL REVIEW	RLM	WJH

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

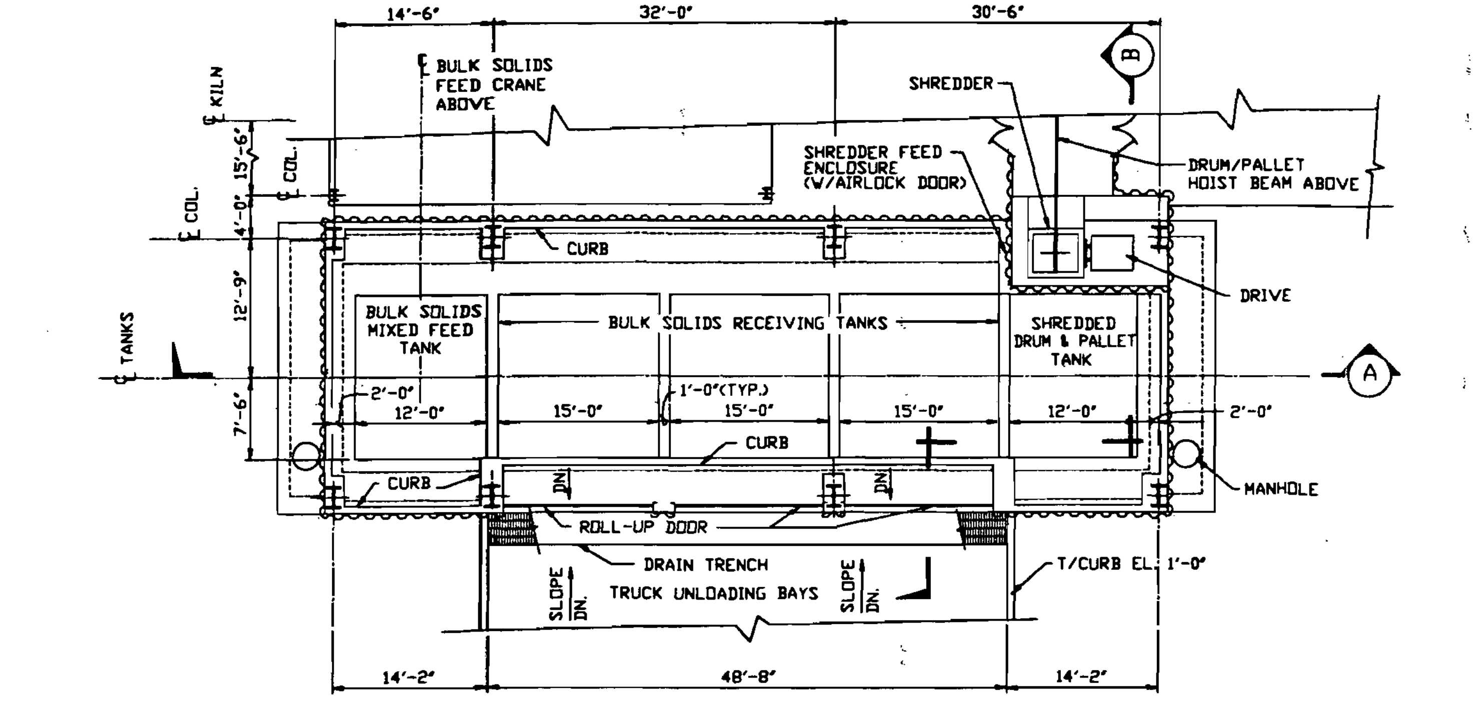
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT-ORGANIC TREATMENT CONTAINER STAGING SECTIONS

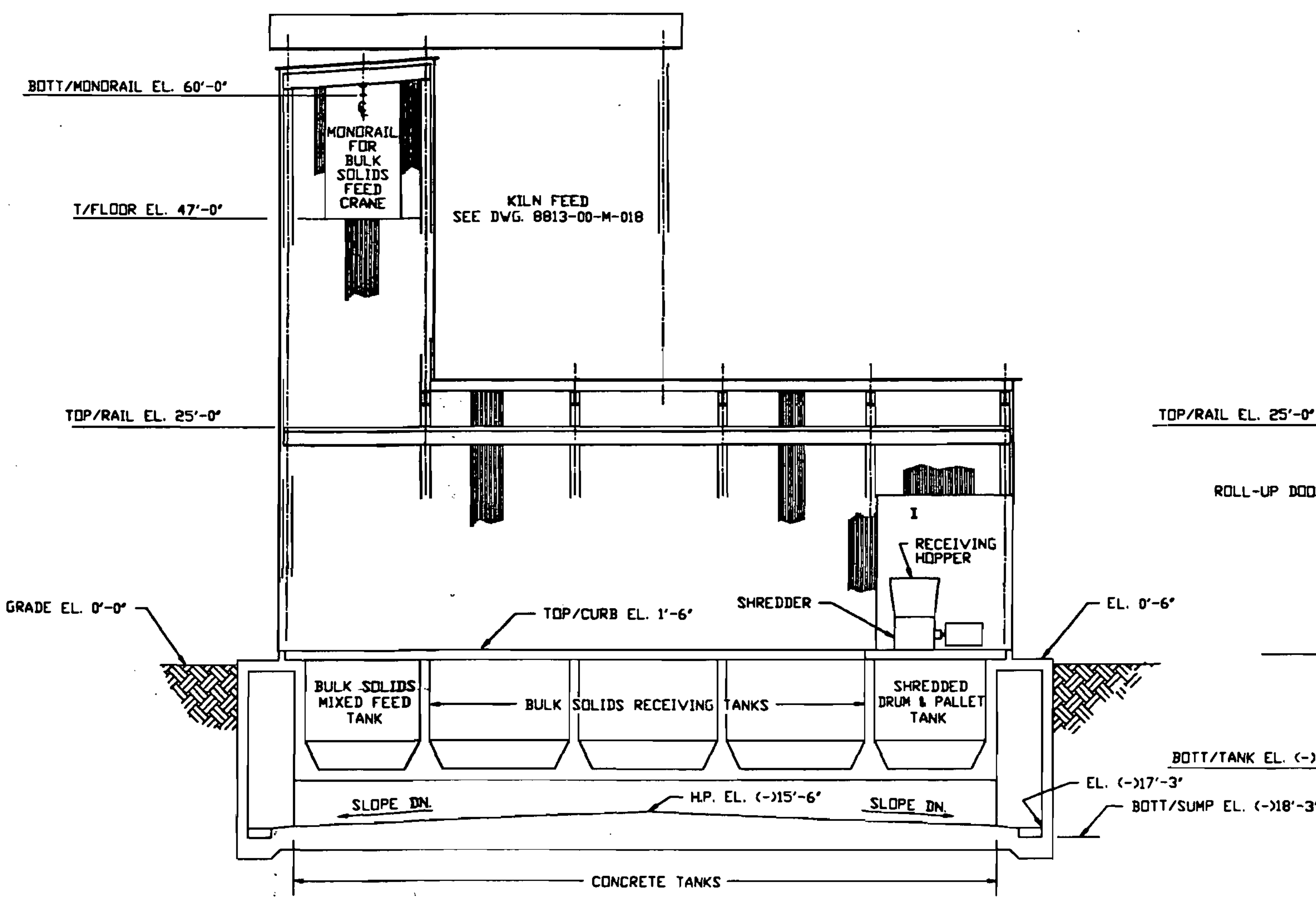
DRAWN RLM	DATE 12/21/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-M-016	D

DATE PLOTTED: 9/8/89 FILE NAME: \8813\8813M016.DWG

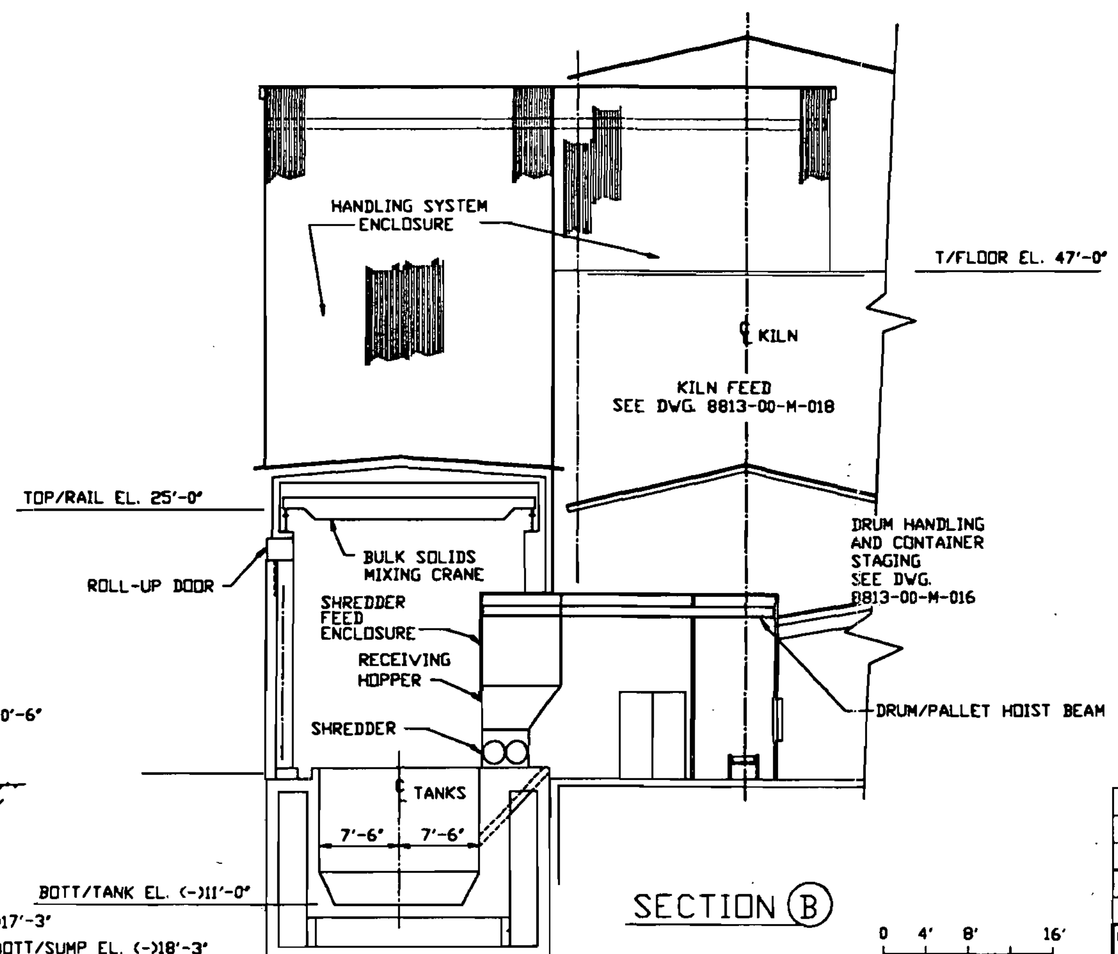
D-1



PLAN ABOVE TANKS



SECTION (A)



SECTION (B)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	WJH
C	4/17/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	2/10/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT BULK SOLIDS UNLOADING & HANDLING PLAN AND SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/23/88			8813-00-M-017	D
CHKD	DATE		DATE		

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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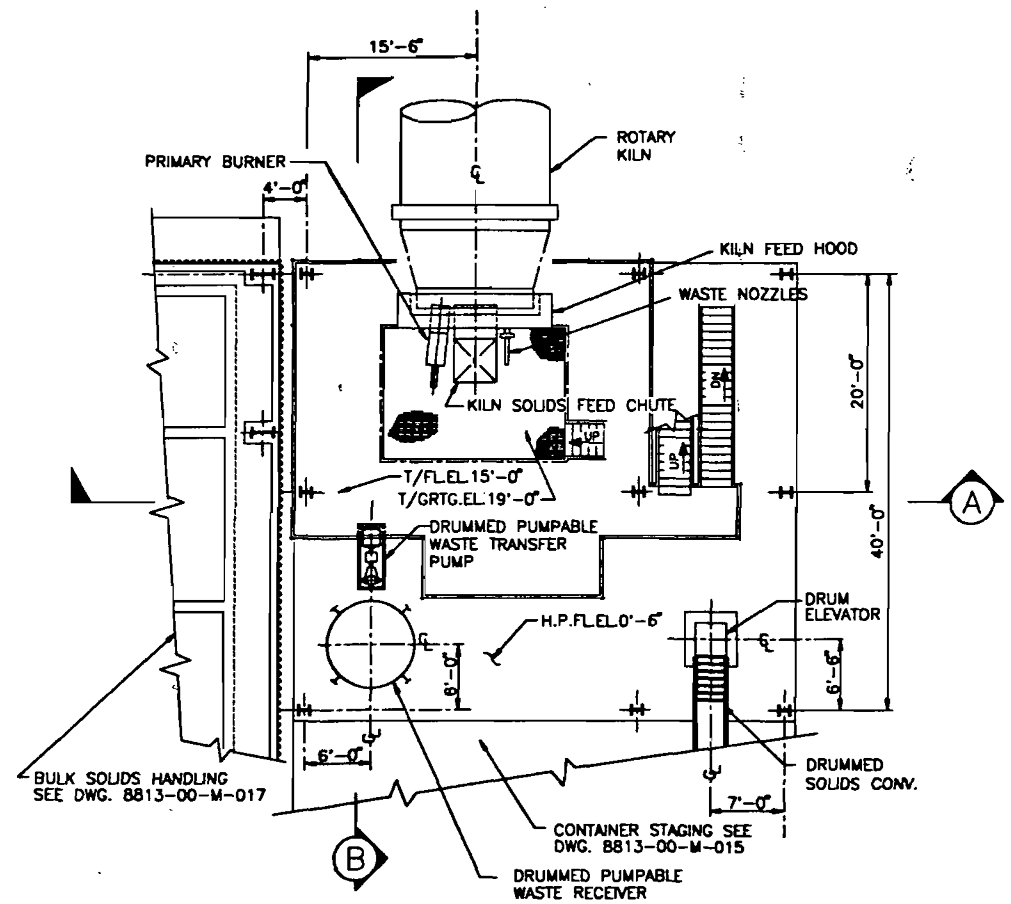
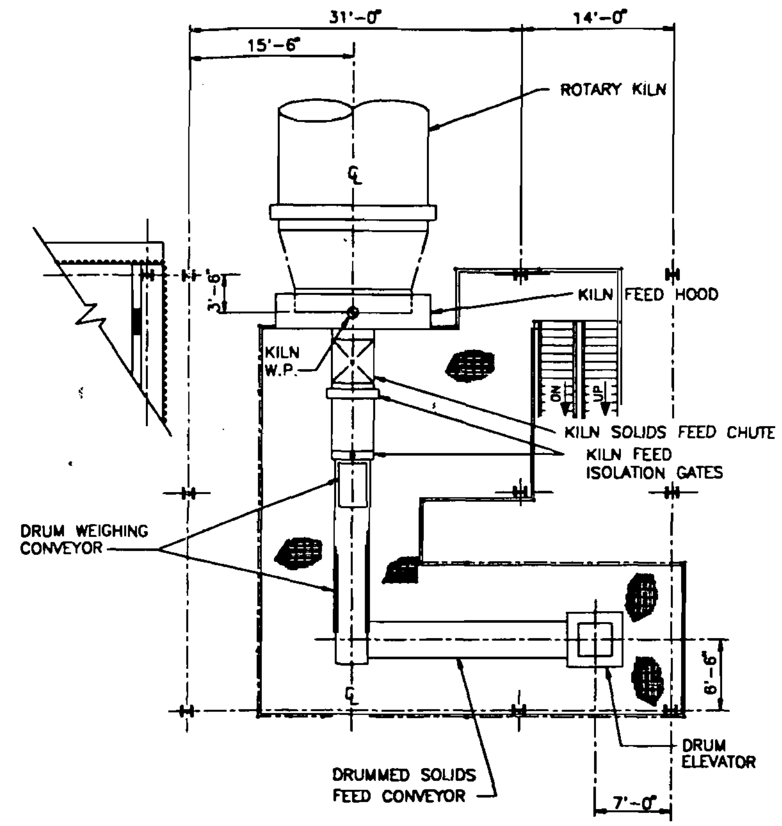
Dick M. Miller 9/25/89

DATE PLOTTED: 9/8/89 FILE NAME: \8813\M017.DWG

D-1



PLAN ABOVE PLATFORM EL. 19'-0"



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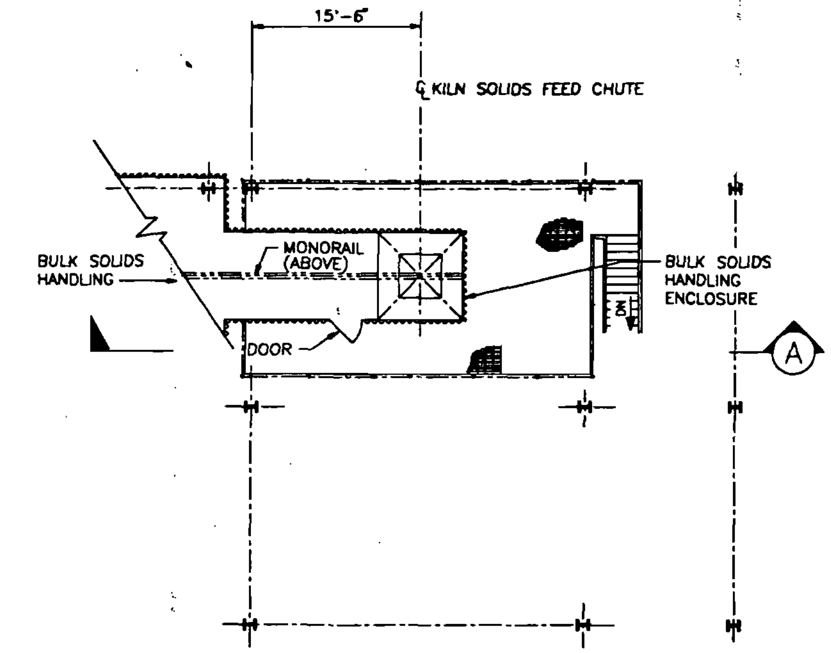

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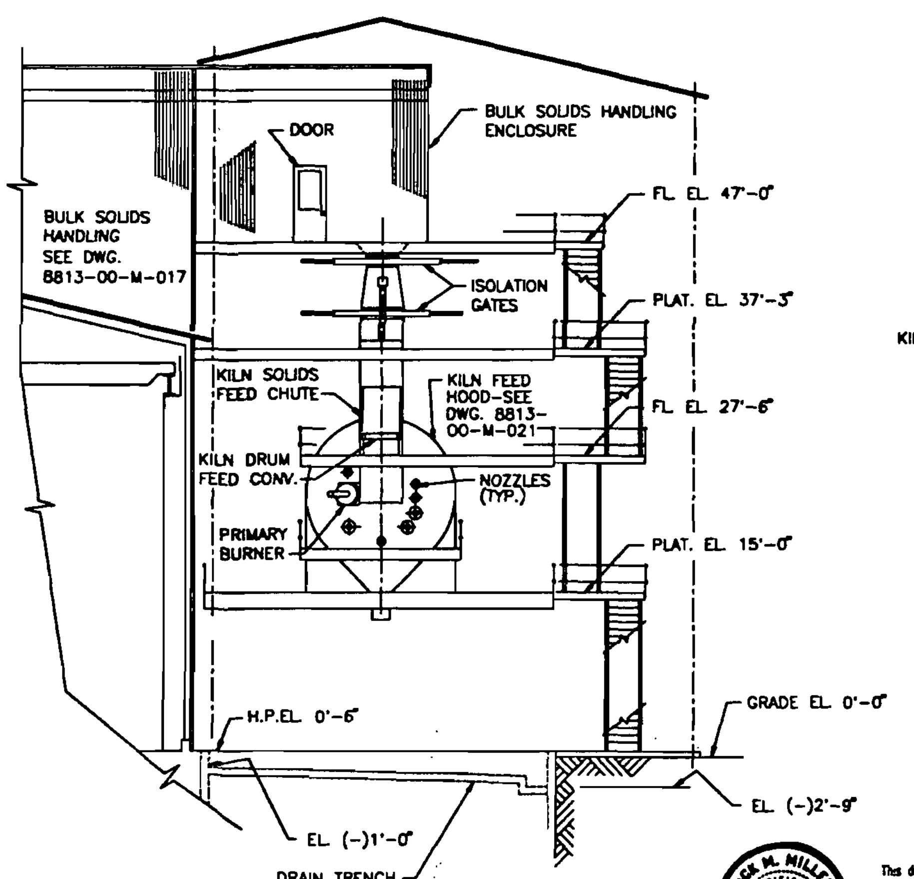
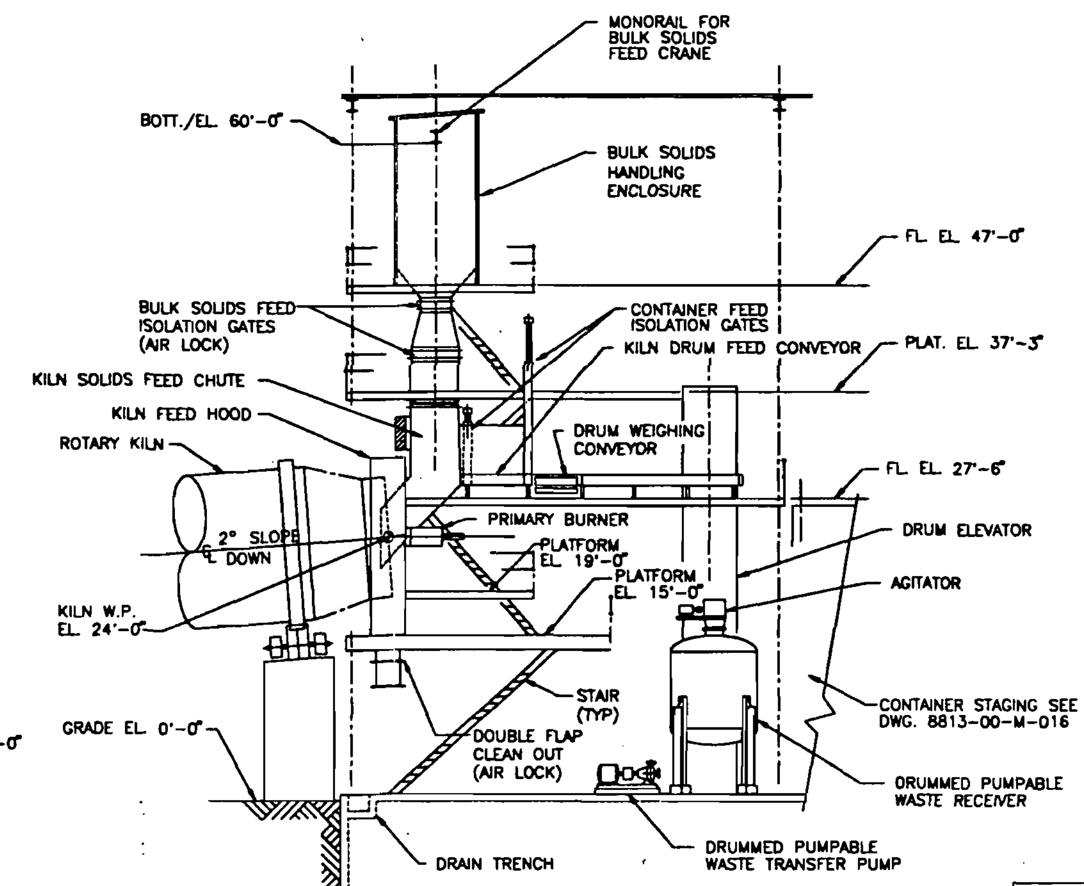


SECTION (A)



SECTION (B)

0 4' 8' 16'
SCALE

NICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

This document has been prepared and is approved by me for inclusion in environmental permit applications only. It is neither approved nor is it to be used for equipment or material procurement, construction or any other purpose.
[signature] 9/25/89

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	WJH
C	4/17/89	ISSUED FOR PERMIT	M.K.	WJH
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	WJH
A	12/20/88	ISSUED FOR INTERNAL REVIEW	M.A.	WJH

SCALE:

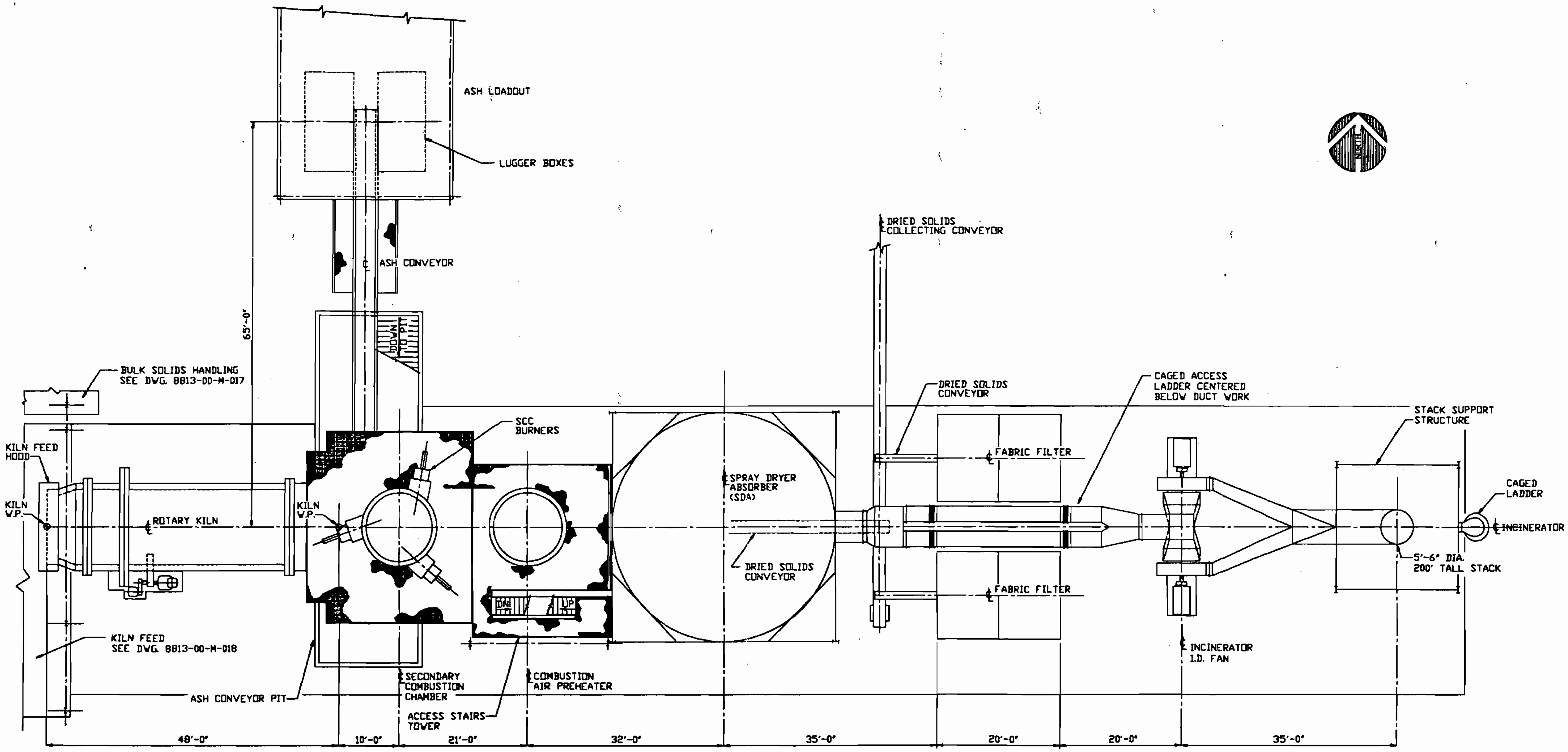
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT KILN FEED PLANS AND SECTIONS

DRAWN K.K. DATE 12/20/88 | CHKD | DATE | APPD | DATE | DRAWING NO. 8813-00-M-018 | REV. D

FILE NAME: 881300018.DWG
DATE PLOTTED: 9/8/89
D-1



PLAN

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	J.B.	WJH
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	W.J.H.
C	4/18/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.J.A.	W.J.H.
A	12/30/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	W.J.H.

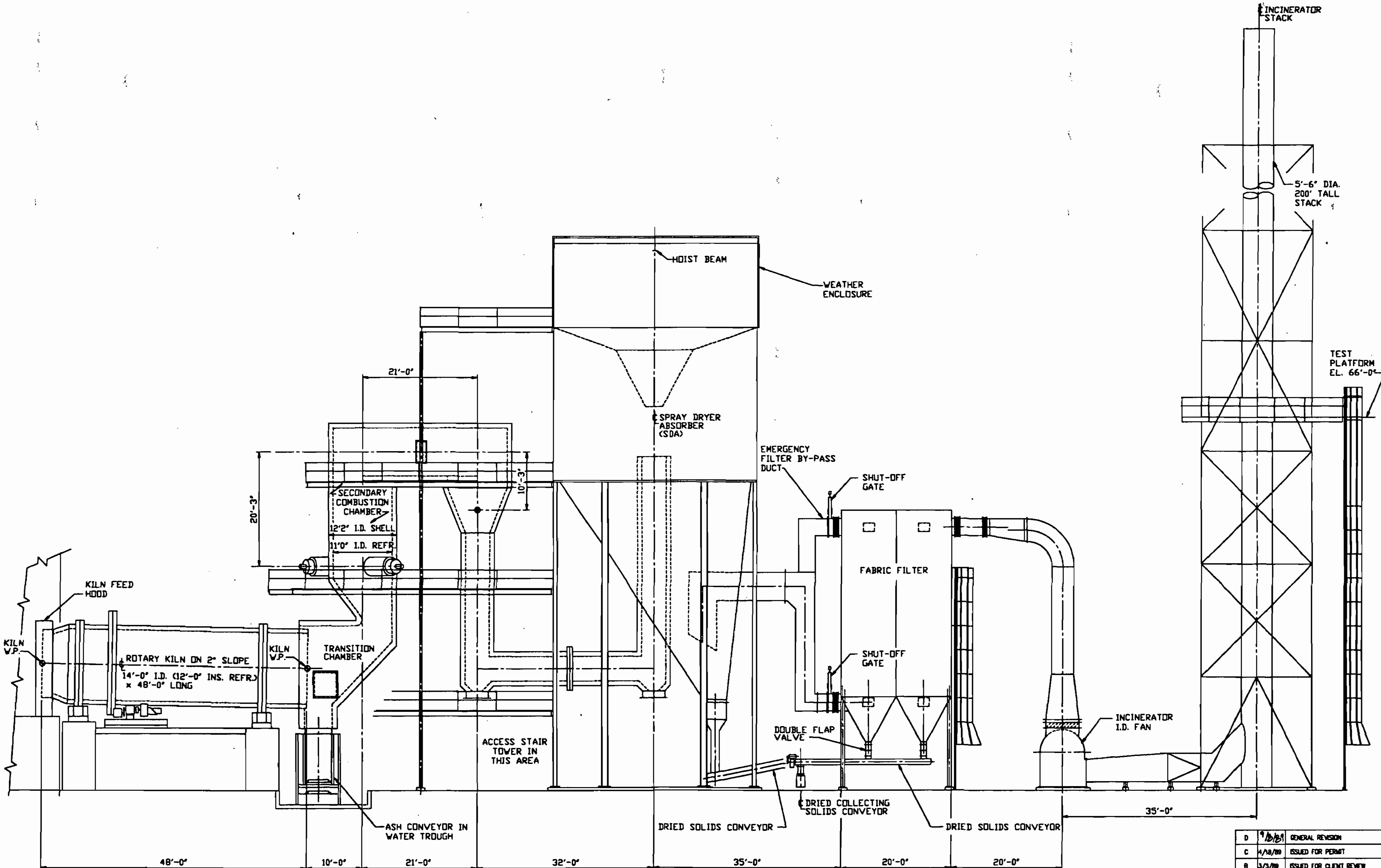
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
KILN AND GAS CLEANING
PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/27/88			8813-00-M-019	E
CHKD	DATE		DATE		

FILE NAME: \8813\8813M019.DWG
DATE PLOTTED: 9/8/89

E-1



ELEVATION

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/13/89	GENERAL REVISION	J.B.	WJH
C	4/18/89	ISSUED FOR PERMIT	M.K.	WJH
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.J.A.	WJH
A	12/30/88	ISSUED FOR INTERNAL REVIEW	M.J.A.	WJH

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
KILN AND GAS CLEANING
ELEVATION

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	12/30/88			8813-00-M-020	D
CHKD	DATE		DATE		

FILE NAME: \8813\8813M020.DWG
DATE PLOTTED: 9/8/89

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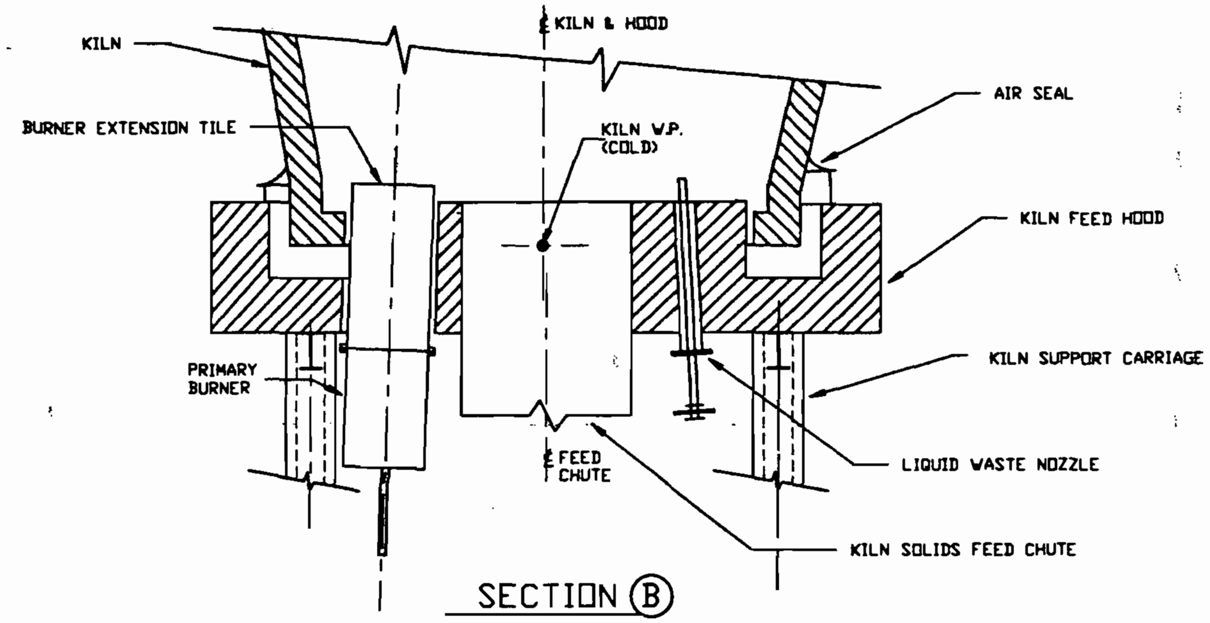
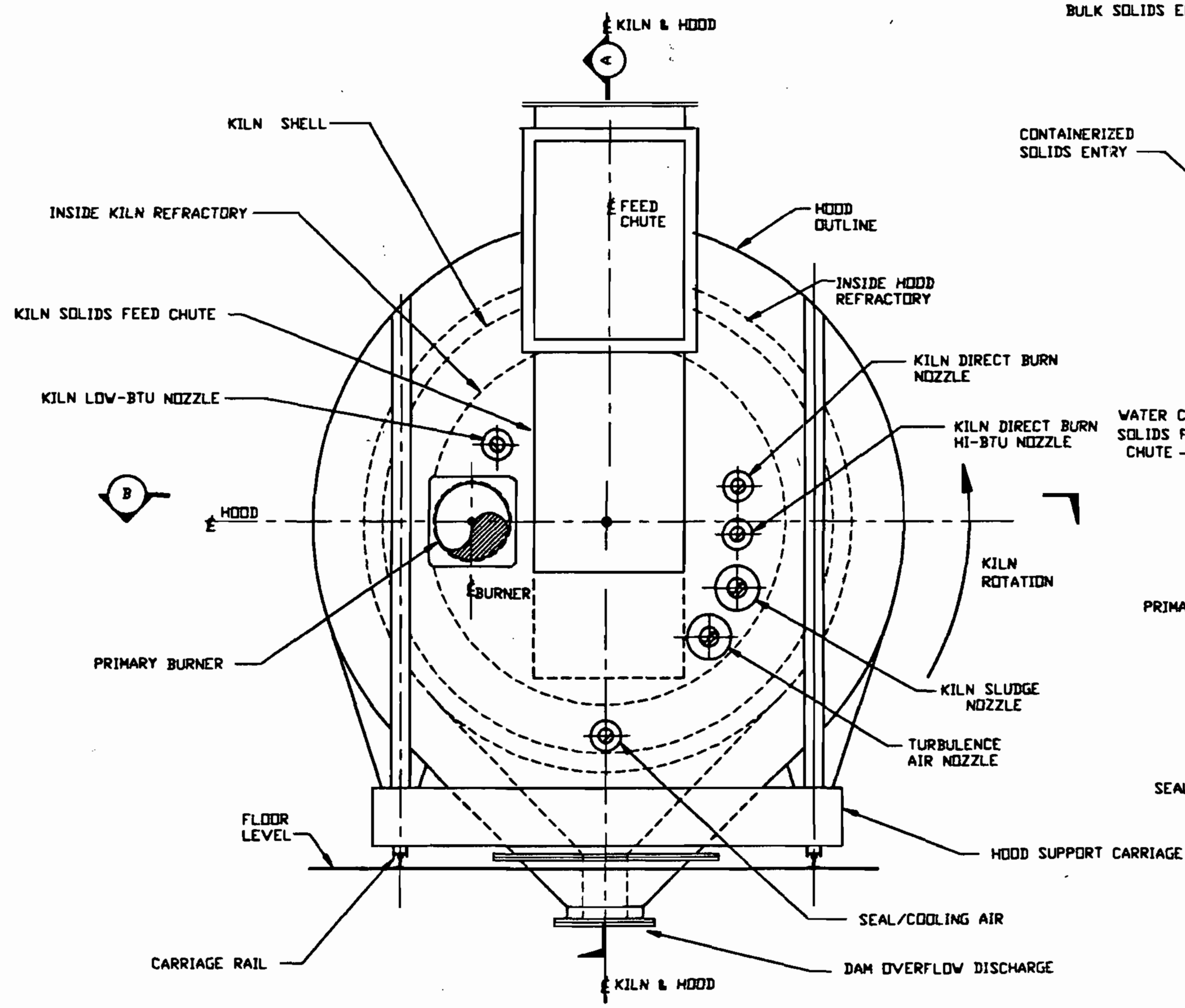
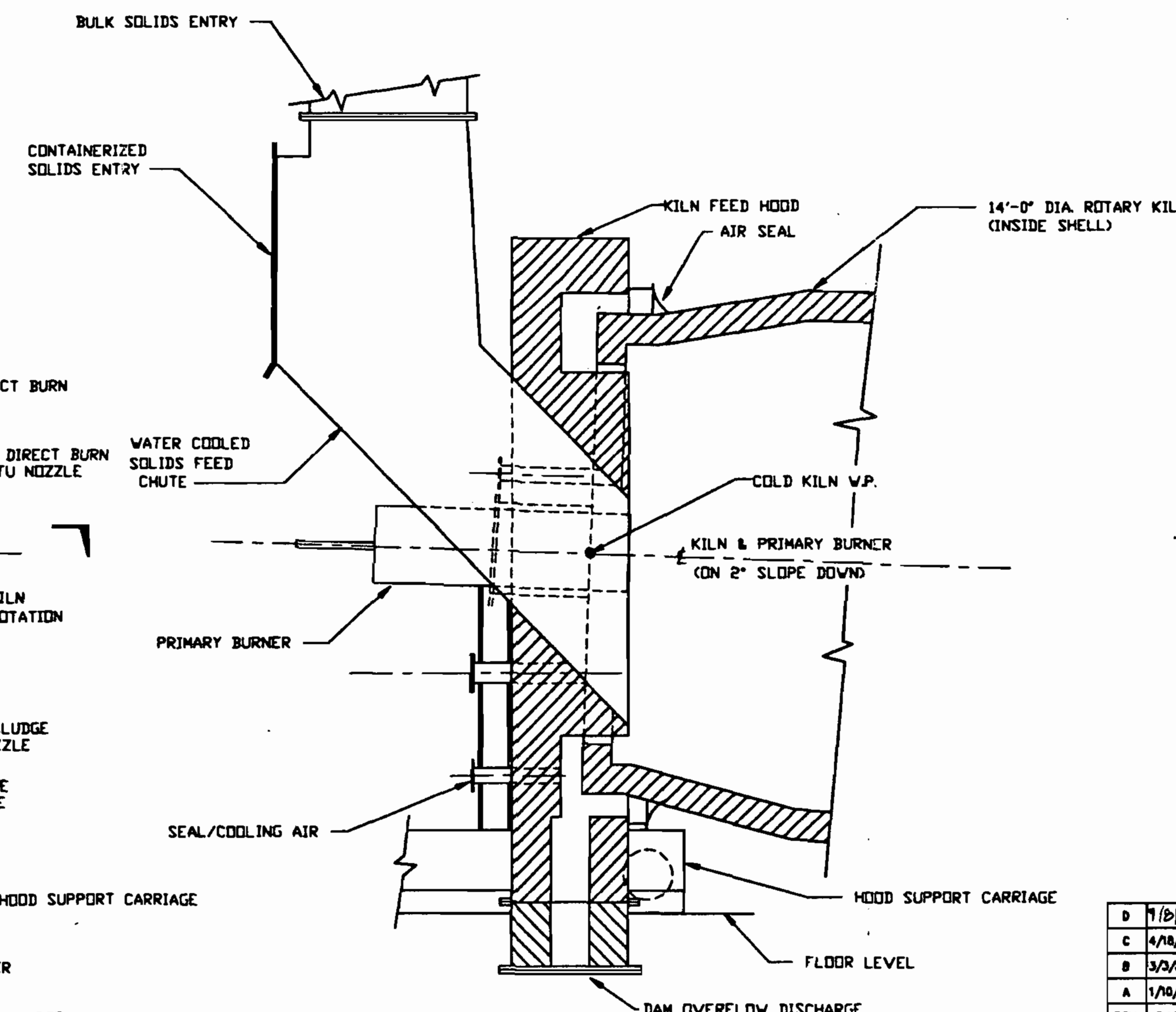


SECTION (B)



FRONT VIEW



SECTION (A)

0 2' 4' 8'

SCALE

REV.	DATE	REVISION	BY	CHKD
D	7/8/89	GENERAL REVISION	M.K.	WJH
C	4/18/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	1/10/89	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems

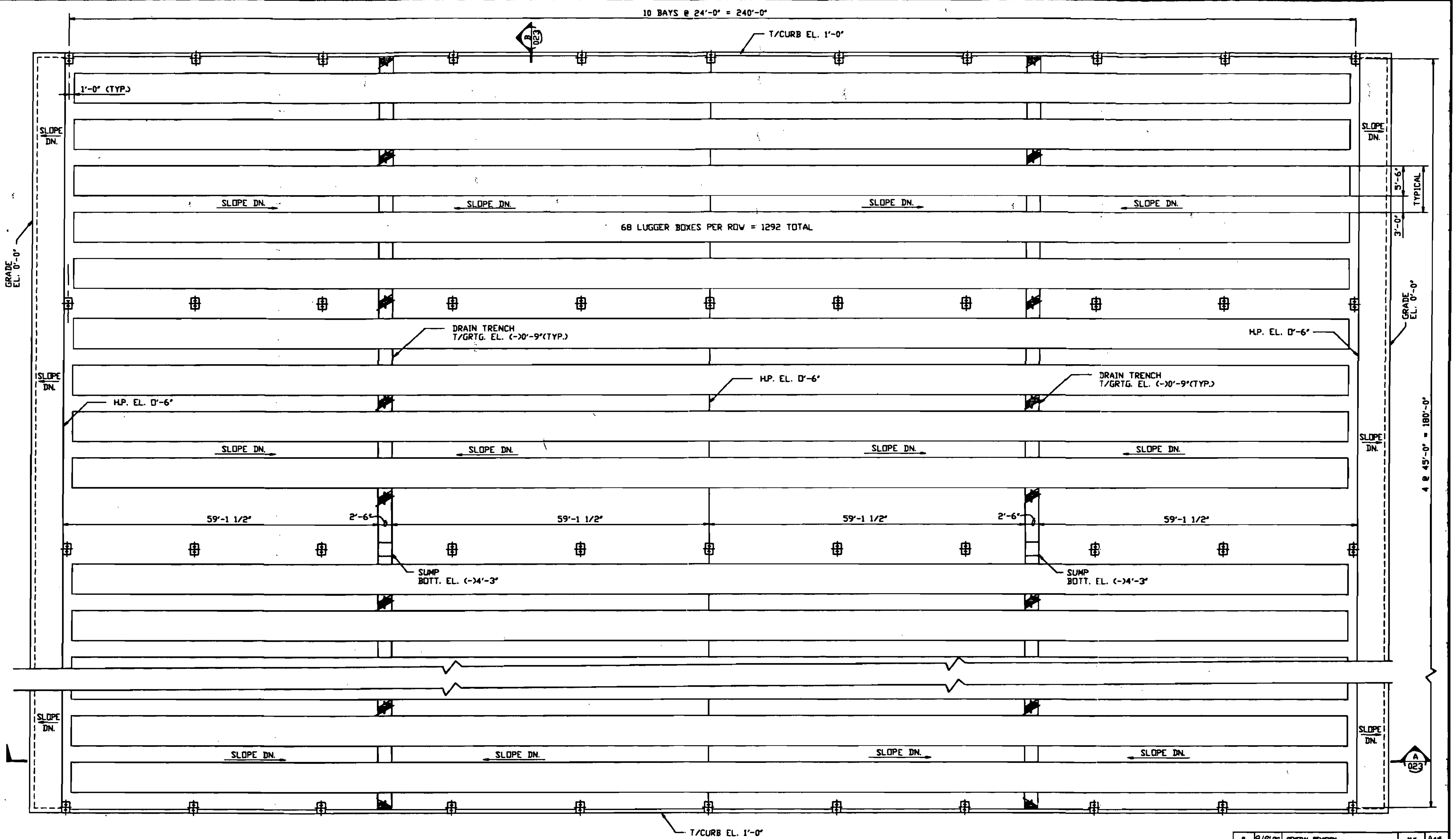
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ARRANGEMENT ORGANIC TREATMENT KILN FEED HOOD

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/6/89			8813-00-M-021	D
CHKD	DATE		DATE		

DATE PLOTTED: 8/8/89 FILE NAME: \8813\8813M021.DWG



0 4' 8' 16'

SCALE

NOTE: THIS DRAWING SHOWS ONE SECTION OF THE BUILDING. THE BUILDING CONSISTS OF TWO IDENTICAL SECTIONS.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/25/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
C	9/8/89	GENERAL REVISION	M.K.	AWS
B	4/25/89	ISSUED FOR PERMIT	M.K.	AWS
A	4/20/89	ISSUED FOR INTERNAL REVIEW	M.K.	AWS

PROJECT

FLORIDA FIRST PROCESSING, INC.

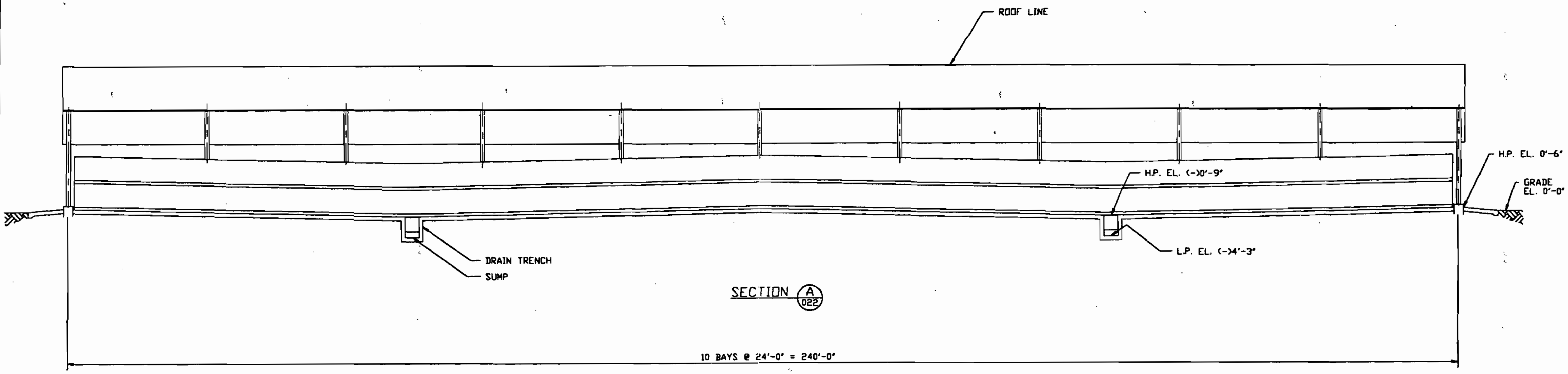
TITLE

GENERAL ARRANGEMENT RESIDUE STORAGE PLAN

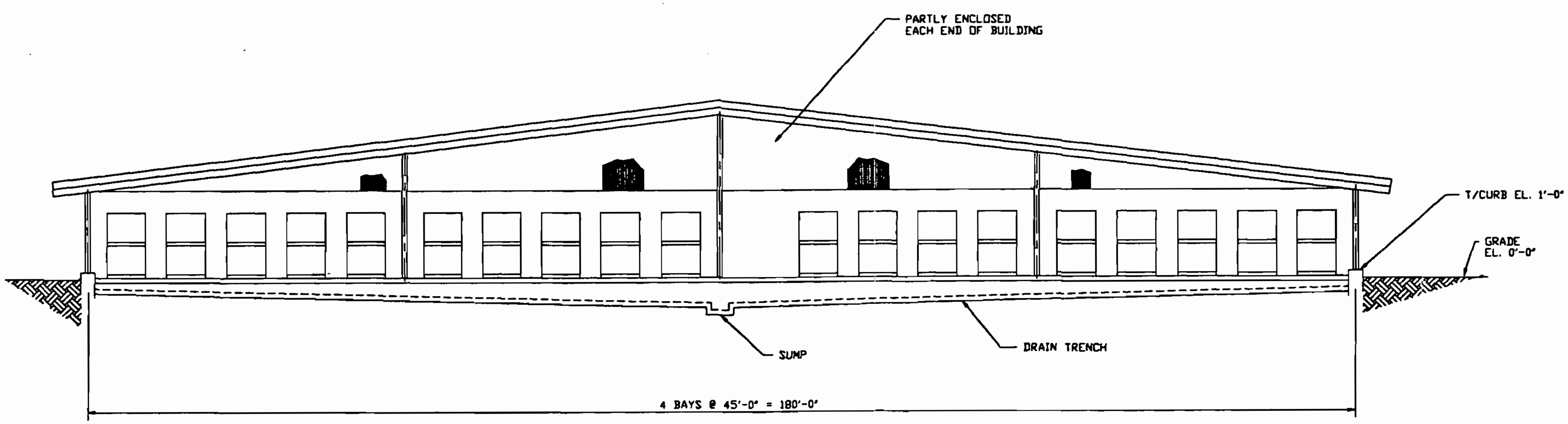
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	4/19/89			8813-00-M-022	C
CHKD	DATE		DATE		

DATE PLOTTED: 9/8/89 FILE NAME: \8813\8813M022.DWG

C-1



SECTION A/022



SECTION B/022

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
C	9/8/89	GENERAL REVISION	T.R.	AWS
B	4/25/89	ISSUED FOR PERMIT	M.K.	AMS
A	4/20/89	ISSUED FOR INTERNAL REVIEW	M.K.	AMS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

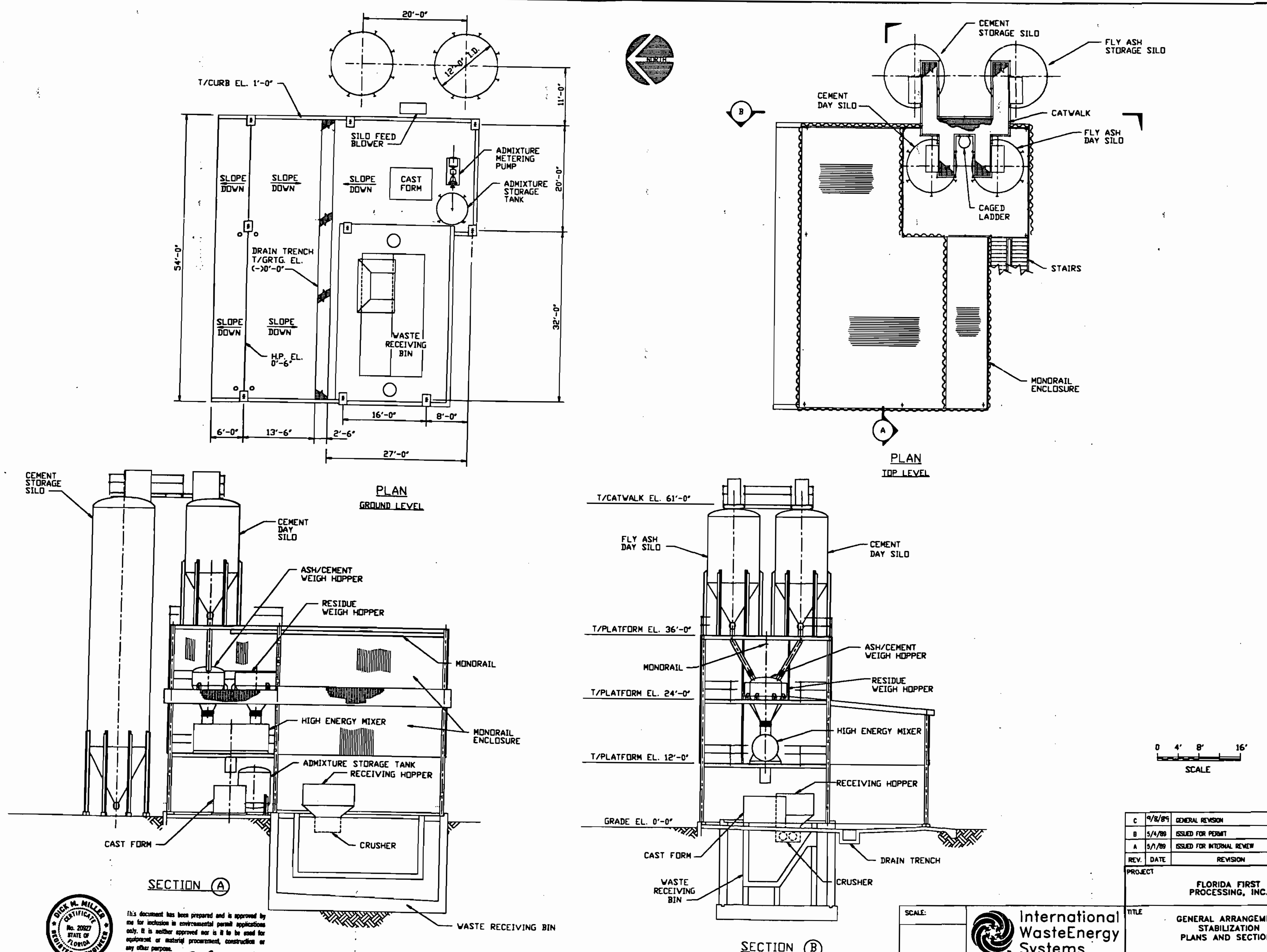
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
RESIDUE STORAGE
SECTIONS

DRAWN M.K.	DATE 4/19/89	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-M-023	C

DATE PLOTTED: 9/07/89 FILE NAME: \8813\8813M023.DWG

C-1



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89 Dick M. Miller

REV.	DATE	REVISION	BY	CHKD
C	9/8/89	GENERAL REVISION	T.R.	ANS
B	5/4/89	ISSUED FOR PERMIT	M.K.	ANS
A	5/1/89	ISSUED FOR INTERNAL REVIEW	M.K.	ANS

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

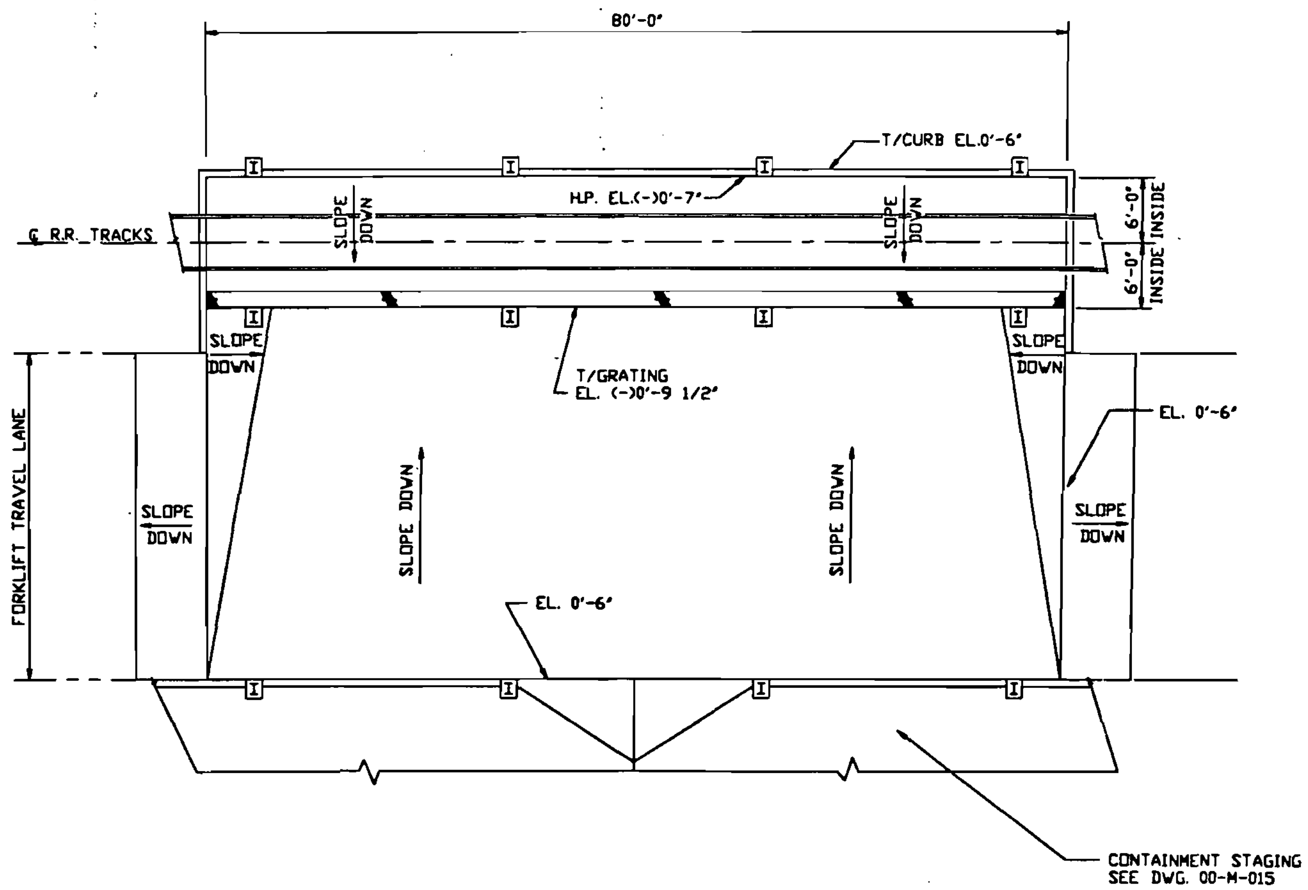
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT STABILIZATION PLANS AND SECTIONS

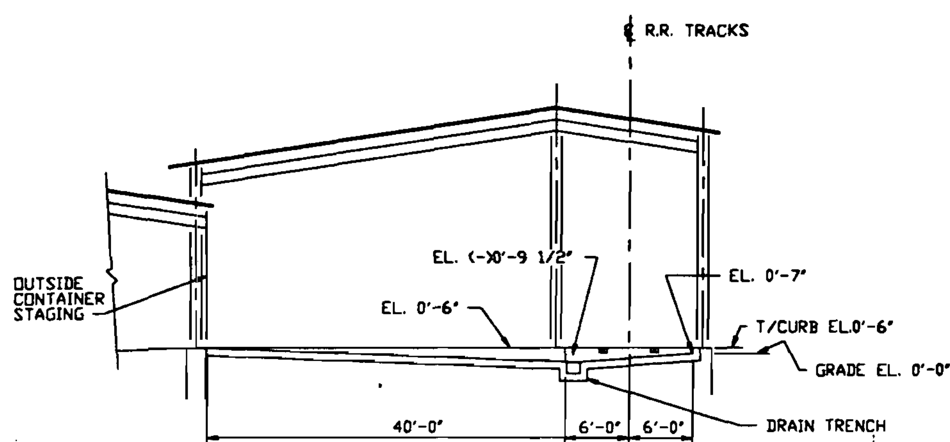
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	4/25/89			8813-00-M-024	C
CHKD	DATE		DATE		

DATE PLOTTED: 9/7/89 FILE NAME: \8813\8813M024.DWG

C-1



PLAN



SECTION (A)

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89 Dick M. Miller

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
C	9/25/89	GENERAL REVISION	T.R.	W.J.H.
B	4/28/89	ISSUED FOR PERMIT	T.R.	W.J.H.
A	4/25/89	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

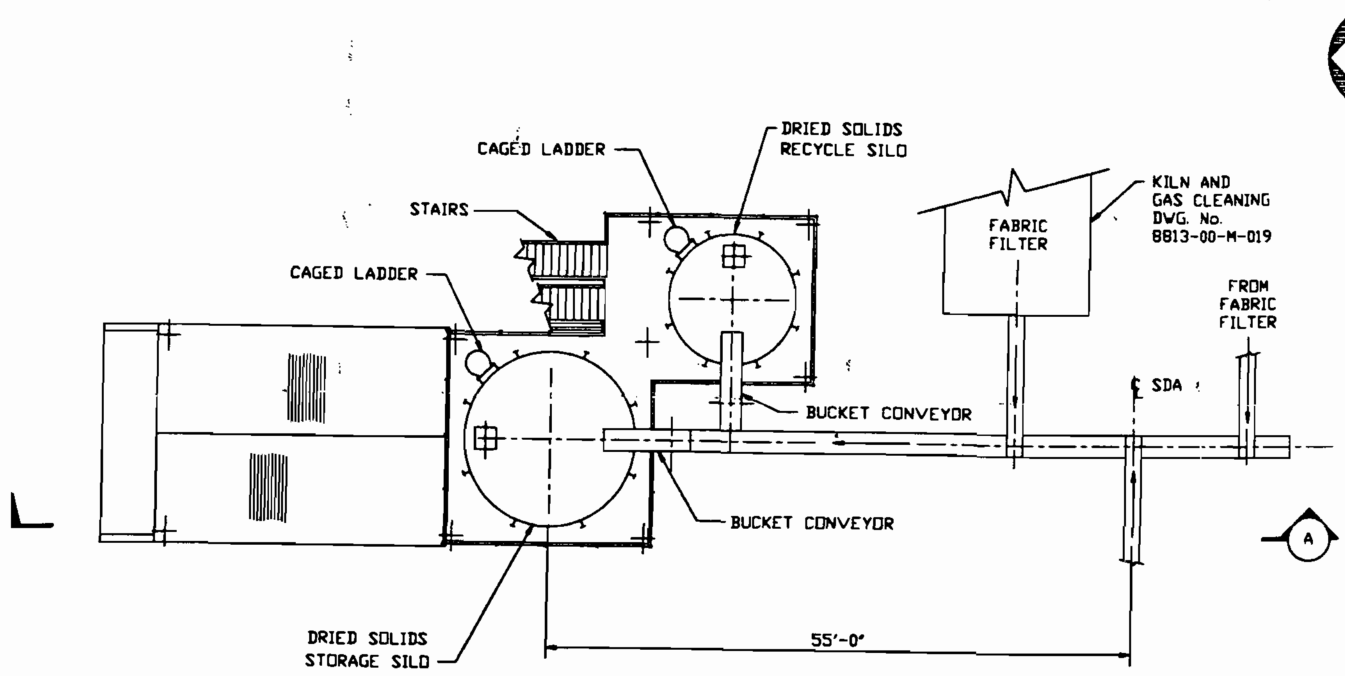
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
R.R. CAR LOADING/UNLOADING
PLAN AND SECTION

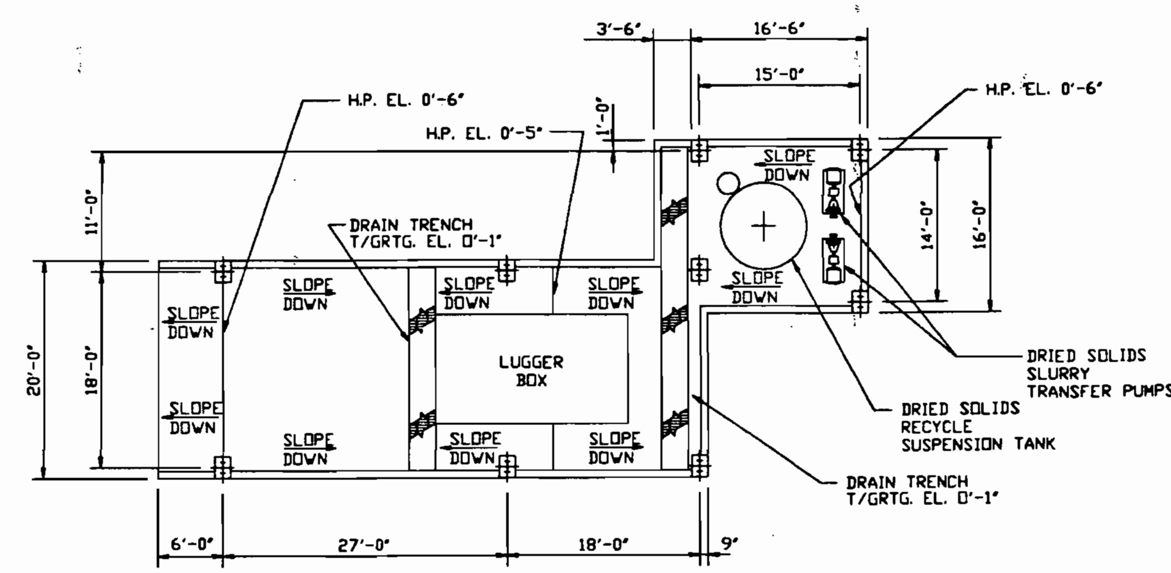
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	4/21/89			8813-00-M-025	C
CHKD	DATE		DATE		

C-1

DATE PLOTTED: 9/7/89 FILE NAME: \8813\88130025.DWG

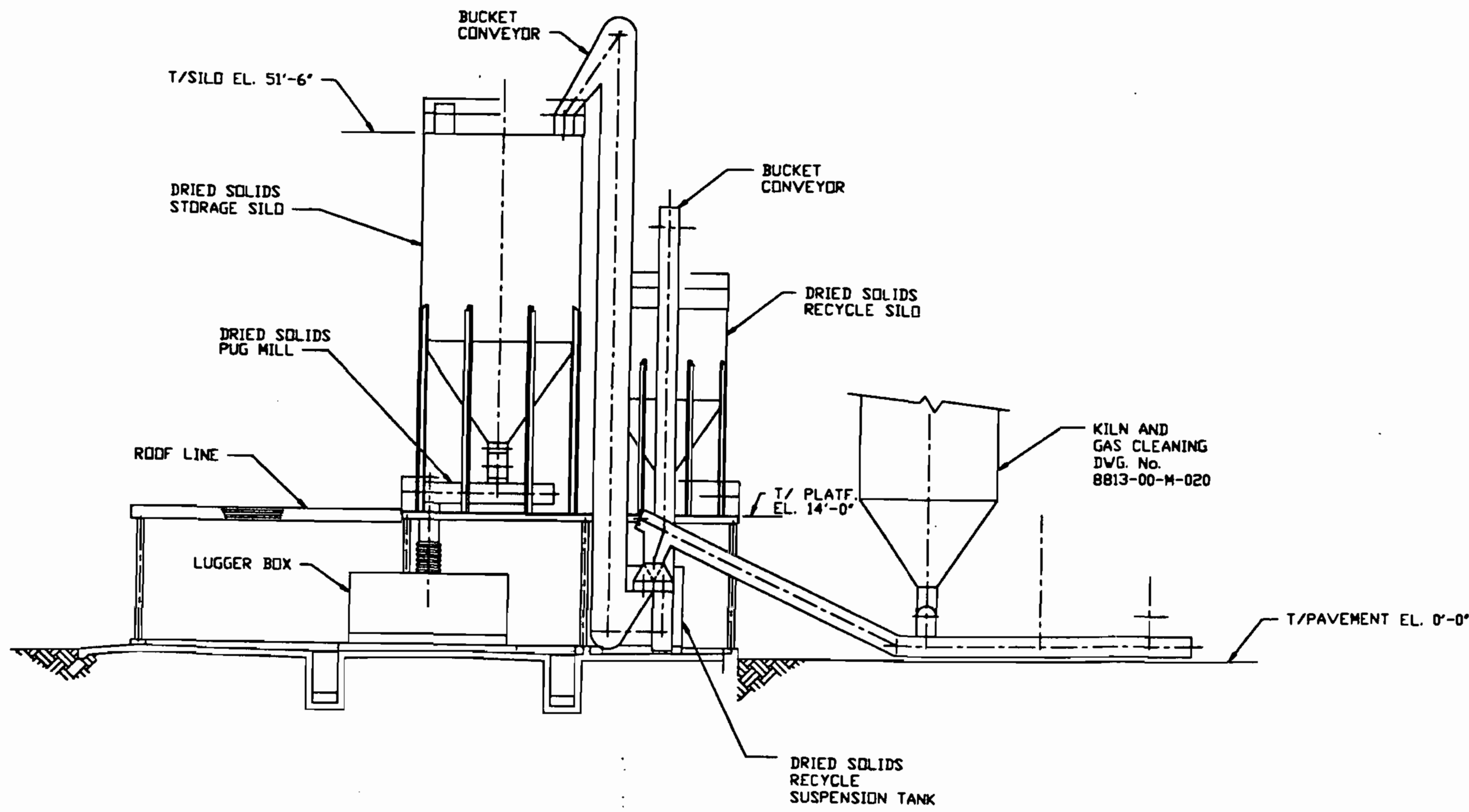


PLAN



PLAN

GROUND LEVEL



SECTION (A)

0 4' 8' 16'

SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	T.R.	ANS
C	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	ANS
B	4/27/89	ISSUED FOR PERMIT	M.K.	ANS
A	4/26/89	ISSUED FOR INTERNAL REVIEW	M.K.	ANS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89 Dick M. Miller

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

PROJECT

FLORIDA FIRST PROCESSING, INC.

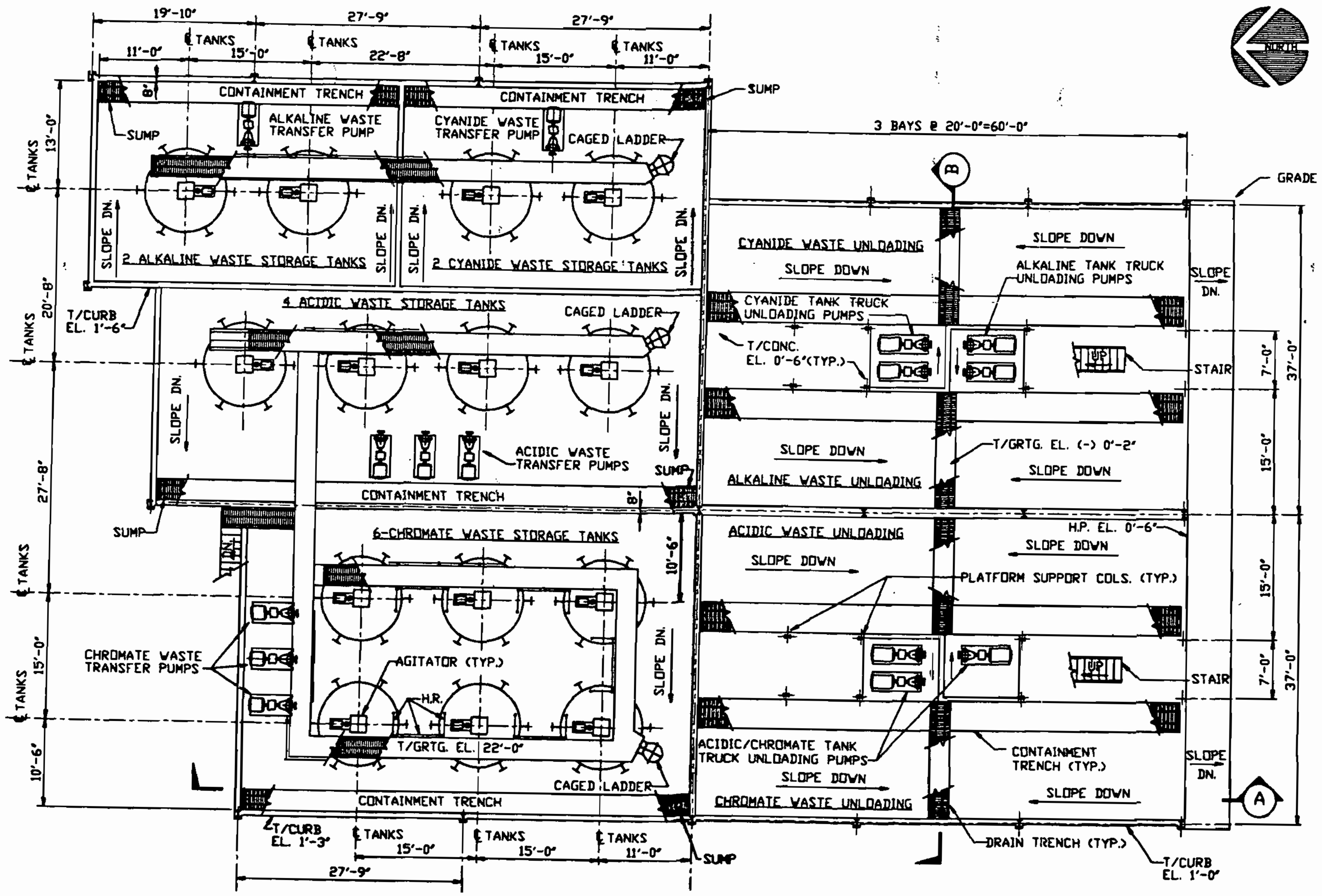
TITLE

GENERAL ARRANGEMENT
ORGANIC TREATMENT
DRIED SOLIDS SYSTEM
PLANS AND SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	4/26/89			8813-00-M-026	D
CHKD	DATE		DATE		

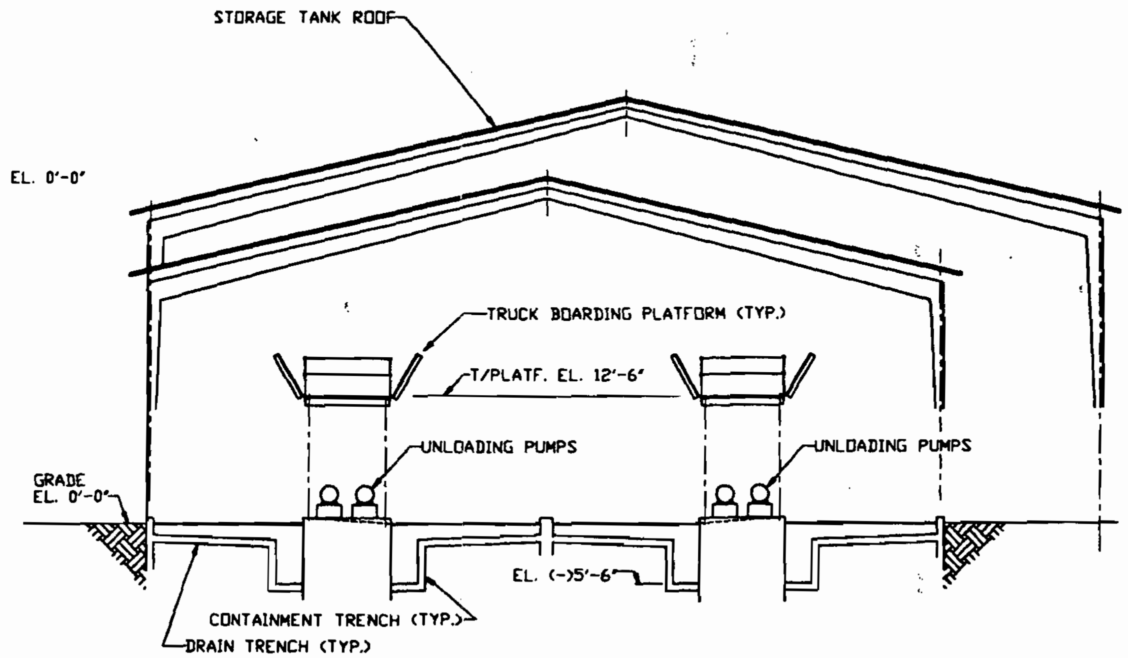
D-1

DATE PLOTTED: 9/07/89 FILE NAME: \8813\8813M026.DWG

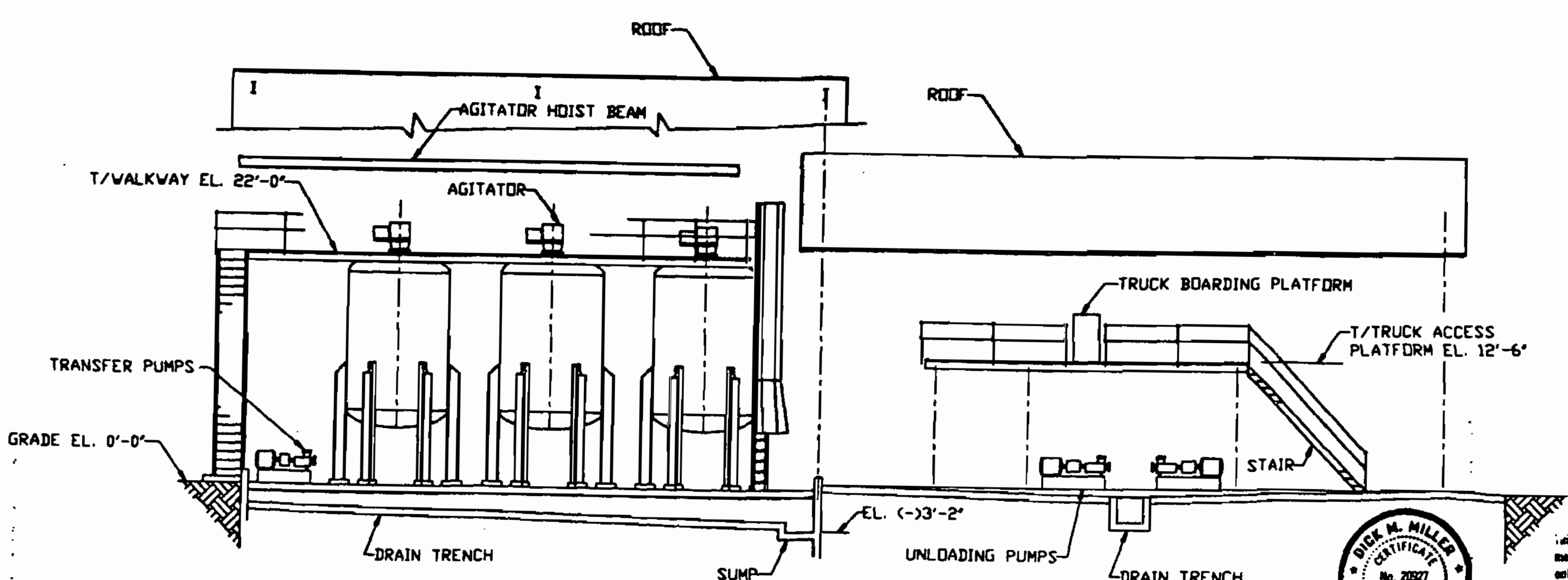


PLAN ABOVE TANKS

PLAN ABOVE UNLOADING BAYS



SECTION (B)



SECTION (A)

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

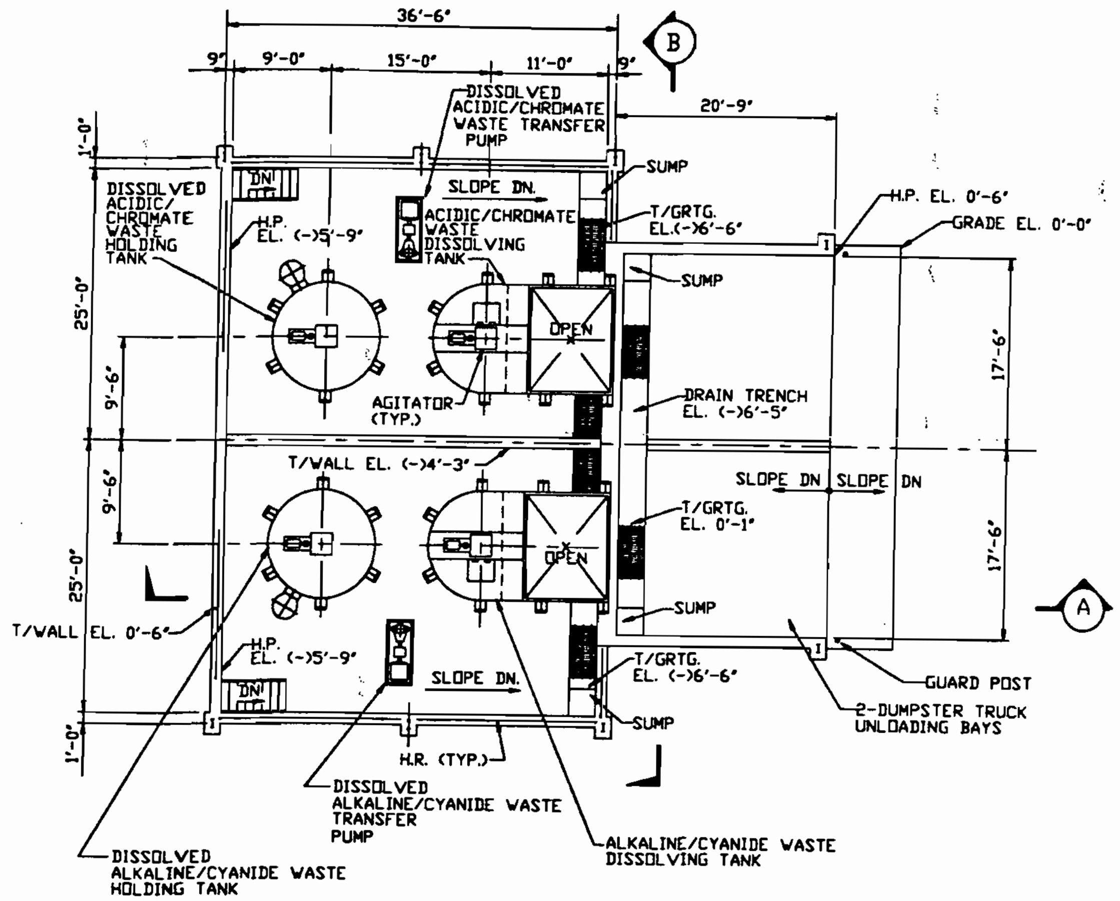
REV.	DATE	REVISION	BY	CHKD
E	9/8/89	GENERAL REVISION	M.K.	R.J.H.
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	W.M
C	4/20/89	ISSUED FOR PERMIT	M.K.	W.M
B	3/3/89	ISSUED FOR CLIENT REVIEW	R.L.M	W.M
A	01/03/89	ISSUED FOR INTERNAL REVIEW	M.K.	W.M

PROJECT
FLORIDA FIRST PROCESSING, INC.

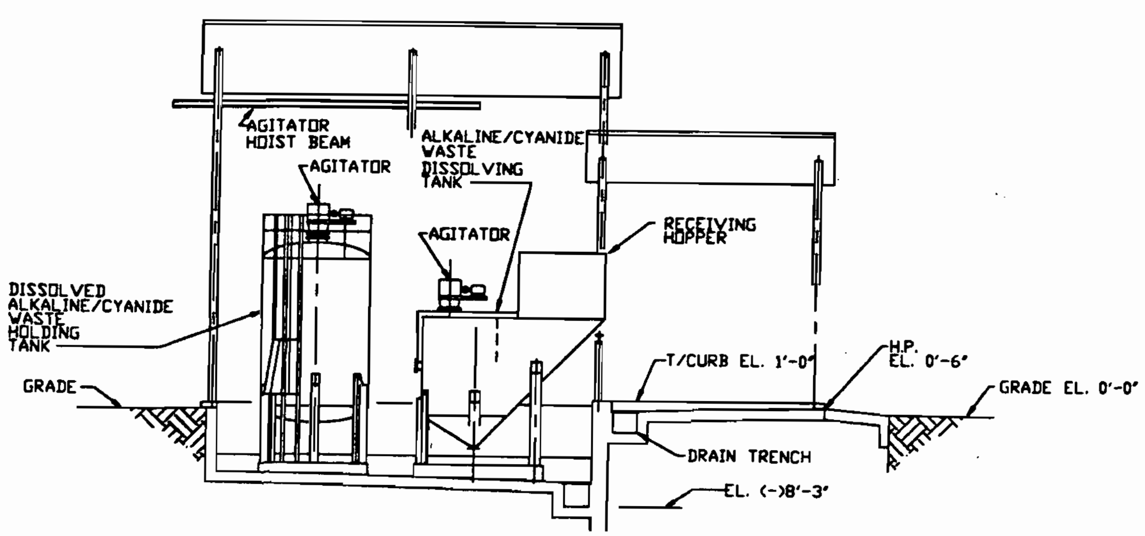
TITLE
GENERAL ARRANGEMENT
INORGANIC TREATMENT
PUMPABLE WASTE UNLOADING & STORAGE
PLAN AND SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/28/88			8813-00-M-030	E
CHKD	DATE		DATE		

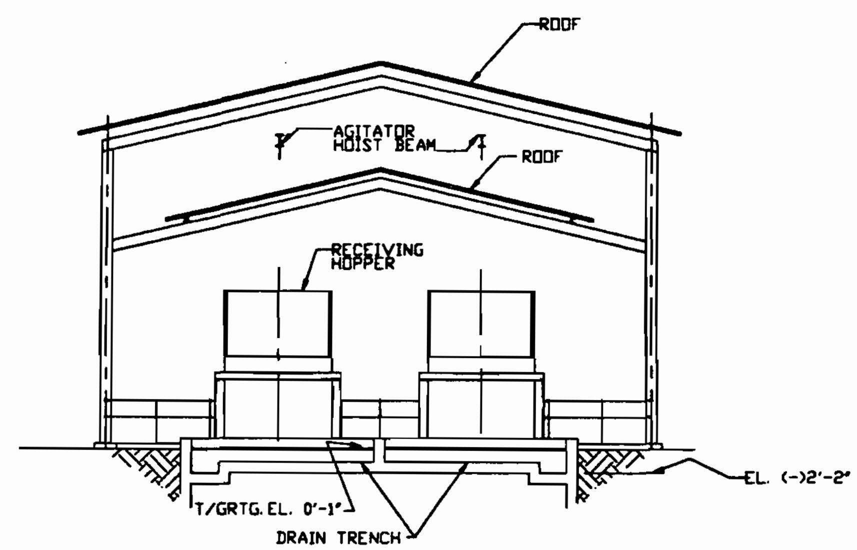
E-1



PLAN



SECTION (A)



SECTION (B)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/13/89	GENERAL REVISIONS	T.R.	W.J.H.
C	4/18/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	12/27/88	ISSUED FOR INTERNAL REVIEW	RLM	W.J.H.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT NON-PUMPABLE WASTE HANDLING PLAN AND SECTIONS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
RLM	12/27/88			8813-00-M-031	D
CHKD	DATE		DATE		

DATE PLOTTED: 9/7/89 FILE NAME: \8813\8813M031.DWG

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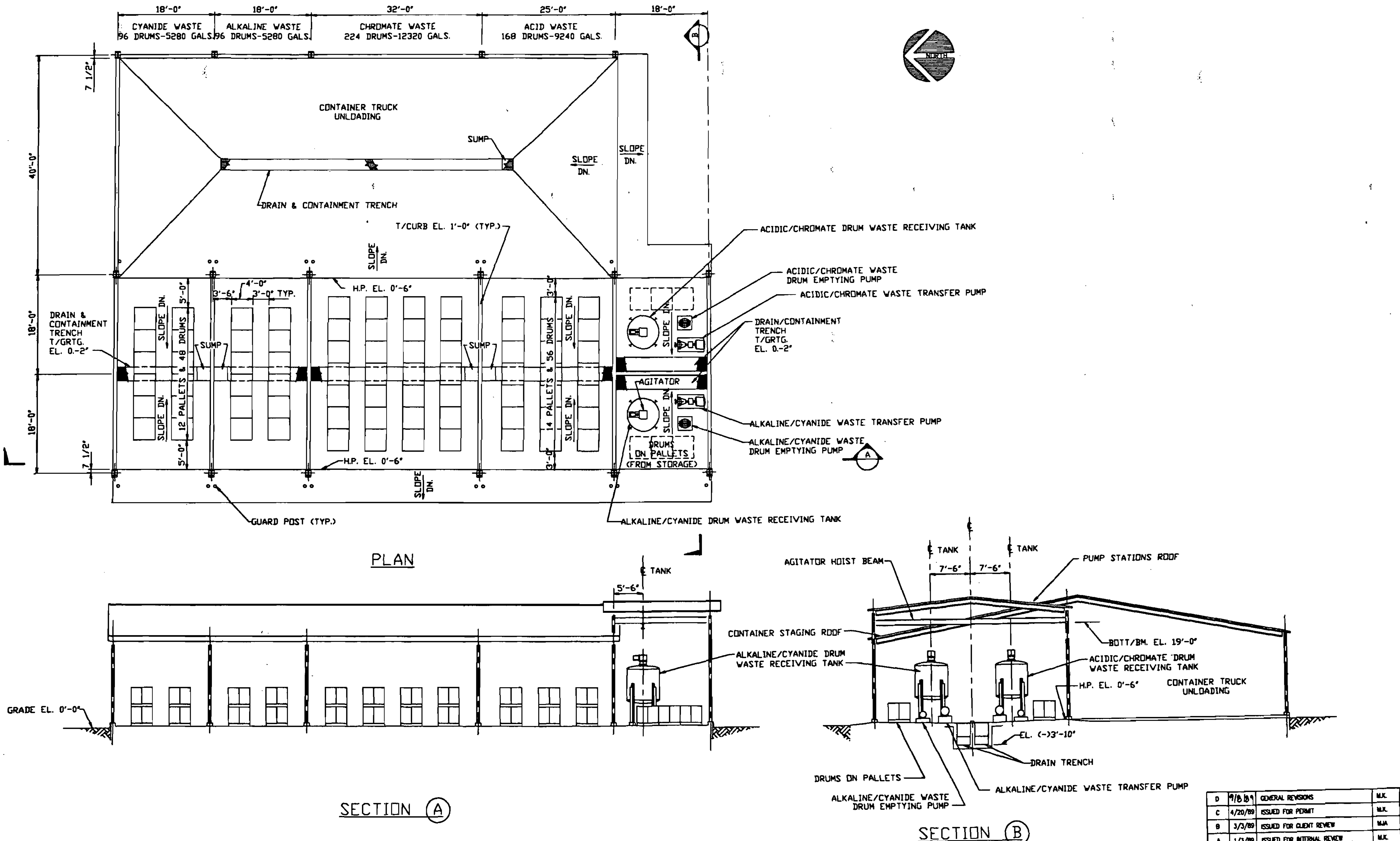

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISIONS	M.K.	
C	4/20/89	ISSUED FOR PERMIT	M.K.	WJH
B	3/3/89	ISSUED FOR CLIENT REVIEW	MJA	WJH
A	1/3/89	ISSUED FOR INTERNAL REVIEW	M.K.	WJH

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT-INORGANIC TREATMENT CONTAINER UNLOADING AND STAGING PLAN AND SECTIONS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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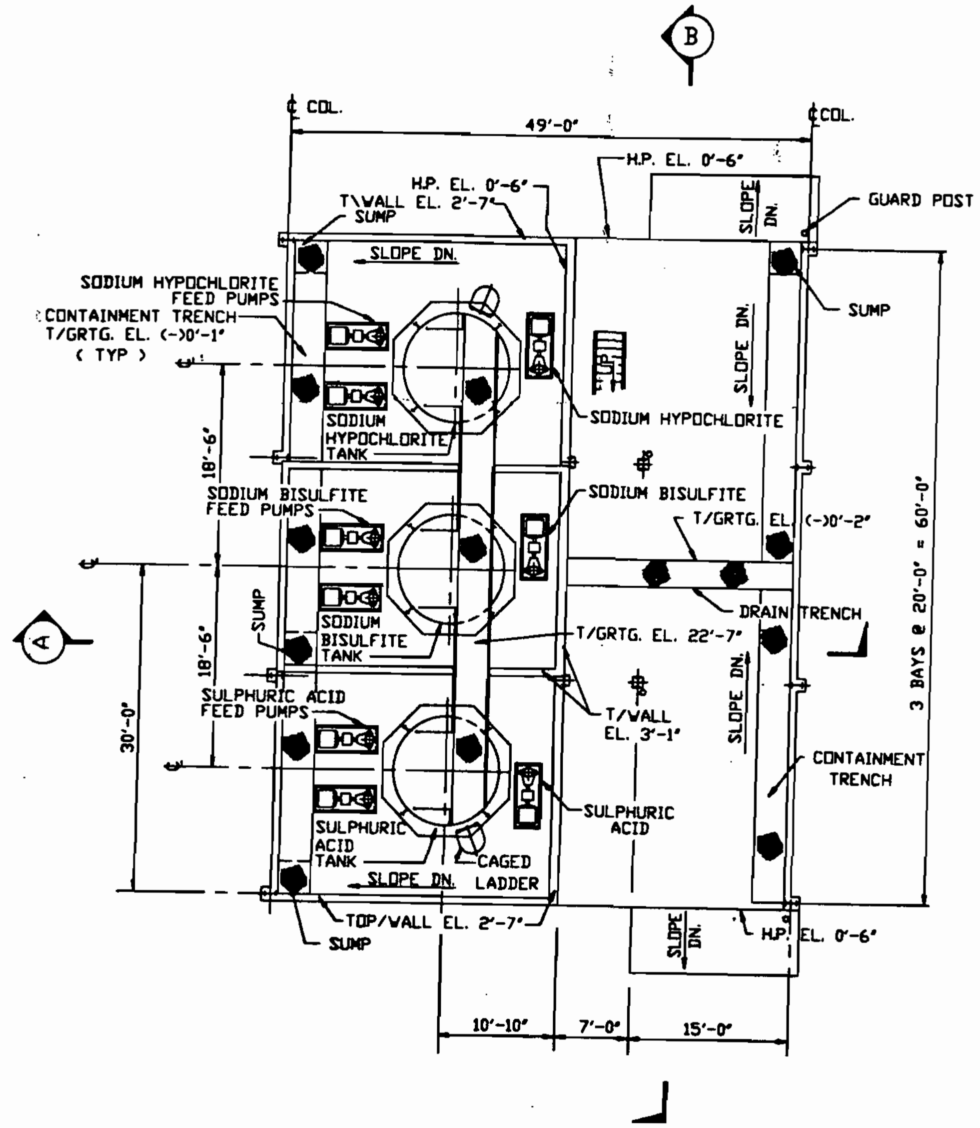
Dick M. Miller 9/25/89

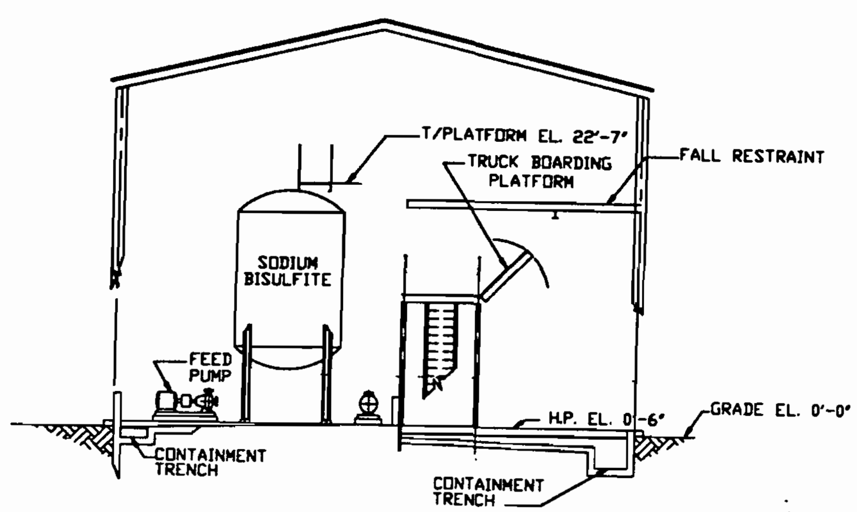
SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

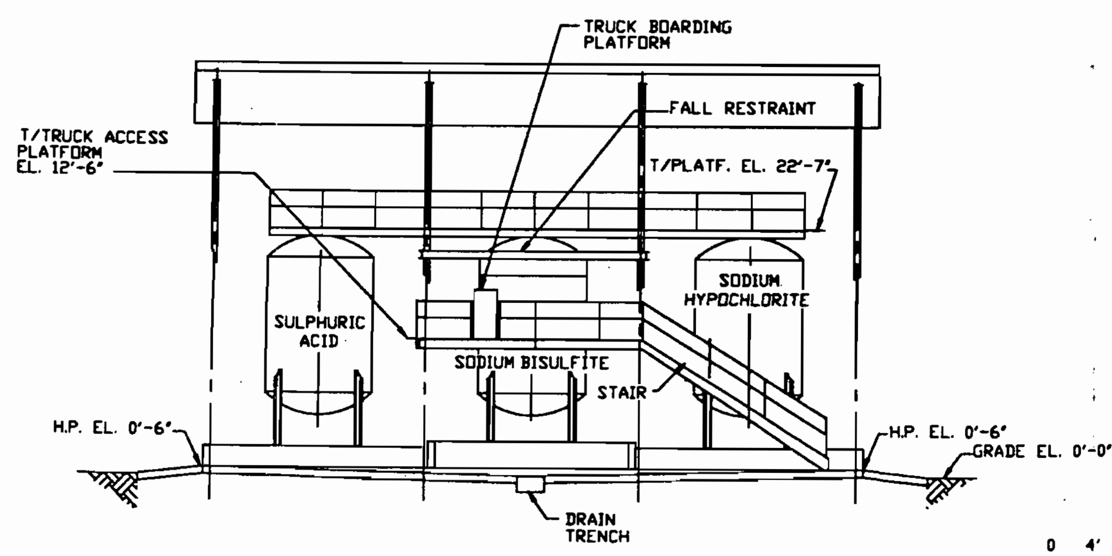
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	12/27/88			8813-00-M-032	D
CHKD	DATE		DATE		

D-1





SECTION (A)



0 4' 8' 16'

SCALE

SECTION (B)

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
D	9/6/89	GENERAL REVISION	J.B.	WJH
C	4/18/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	1/10/89	ISSUED FOR INTERNAL REVIEW	GHB	W.J.H.

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

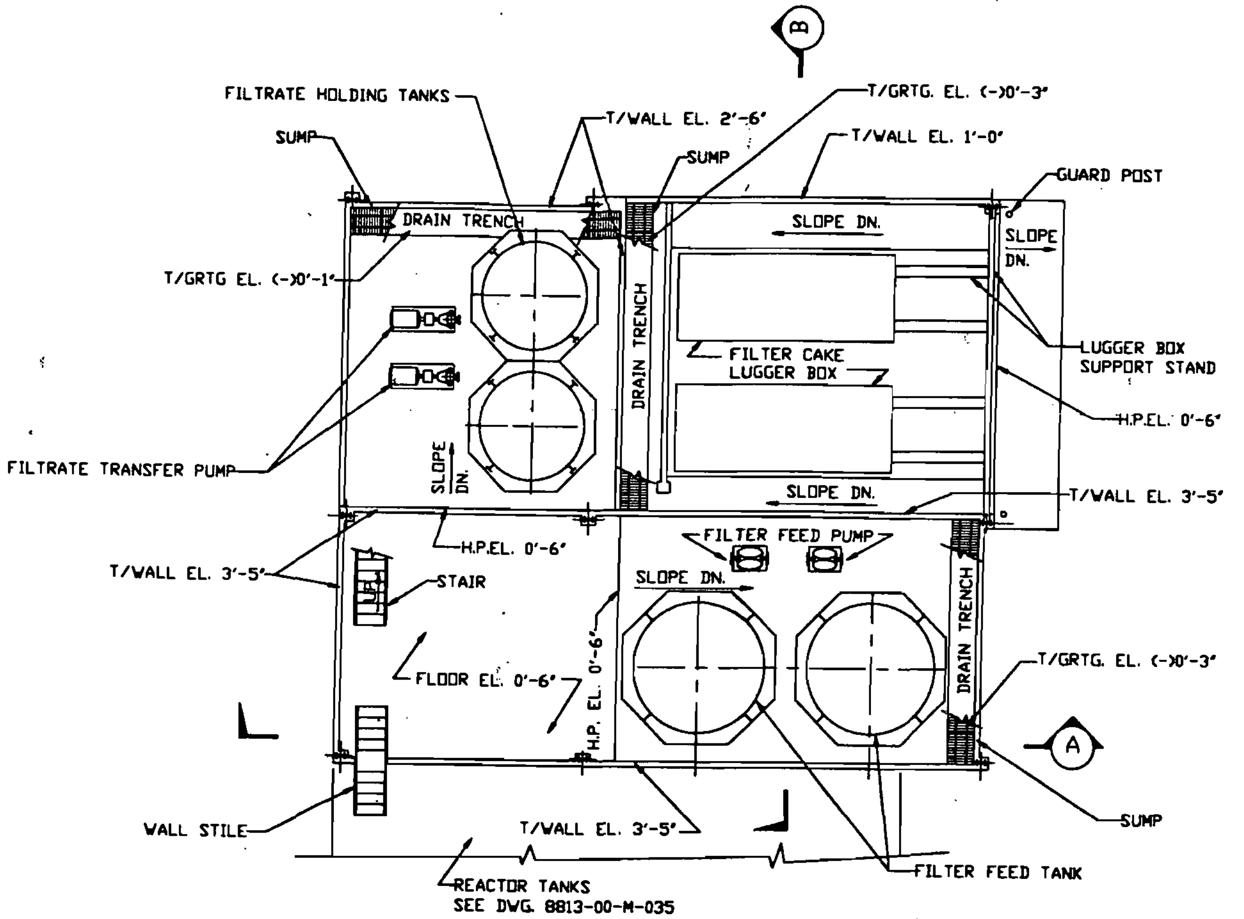
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
INORGANIC TREATMENT
REAGENT UNLOADING AND STORAGE
PLAN AND SECTIONS

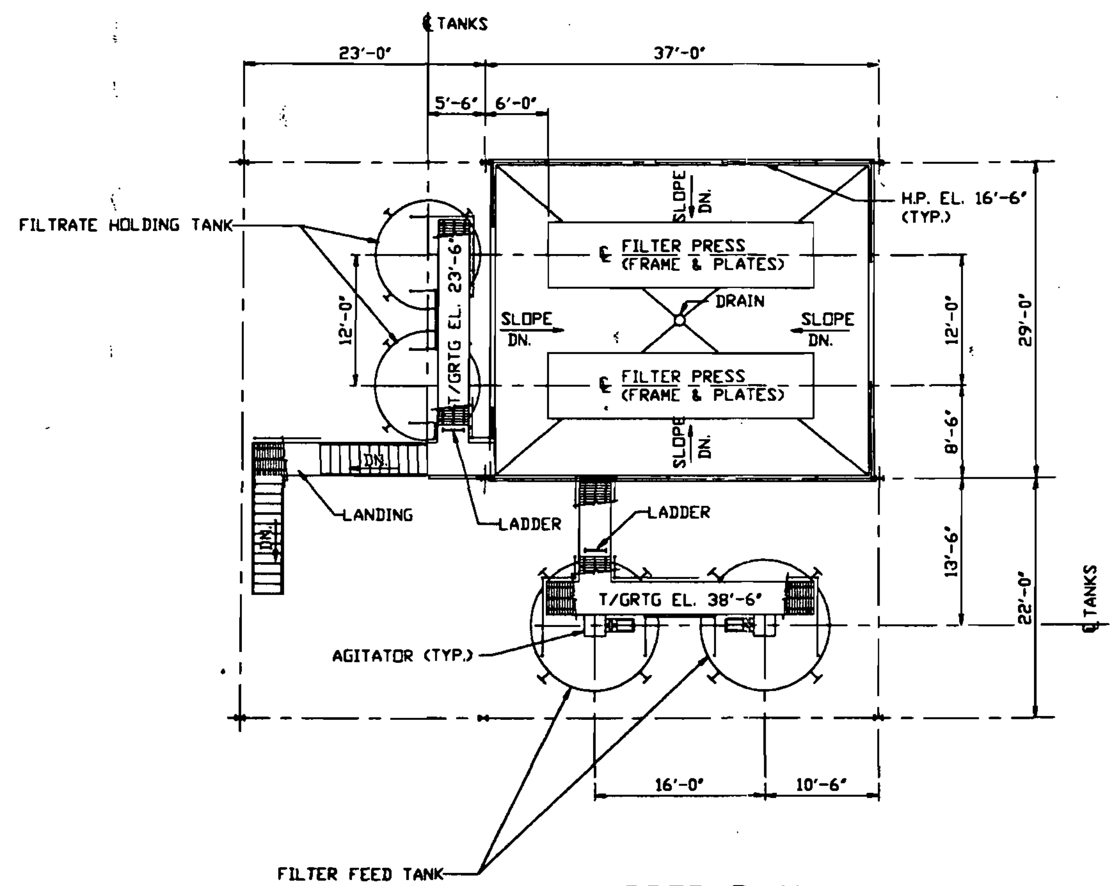
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	12/30/88			8813-00-M-033	D
CHKD	DATE		DATE		

FILE NAME: \8813\8813M033.DWG
DATE PLOTTED: 9/8/89

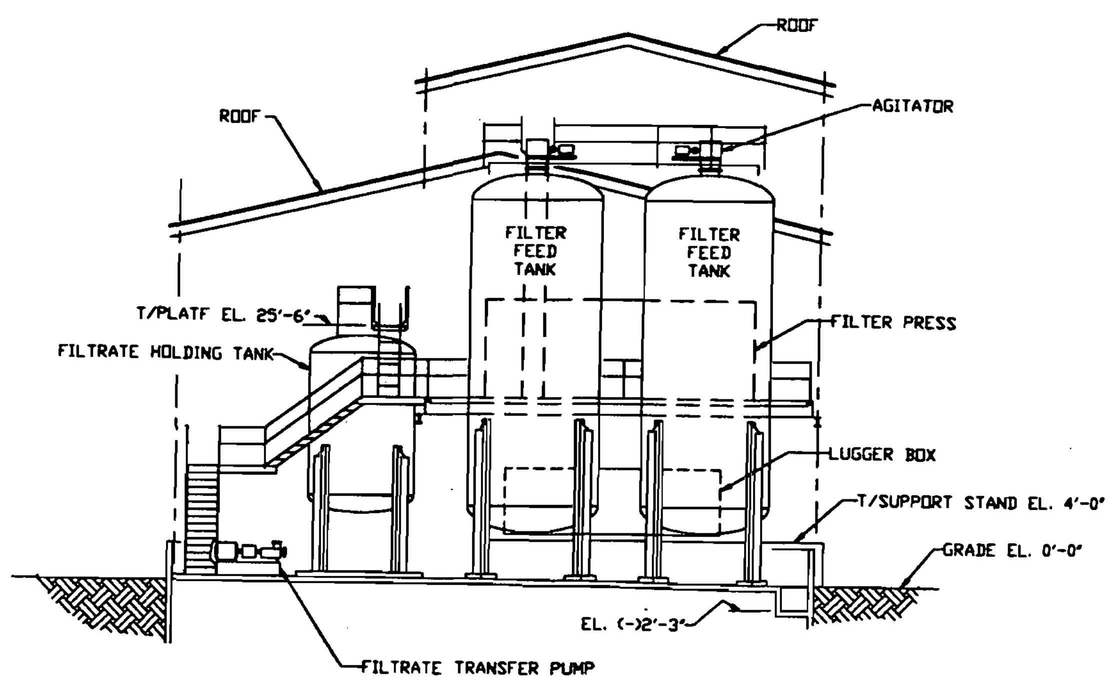
D-1



LOWER PLAN



UPPER PLAN



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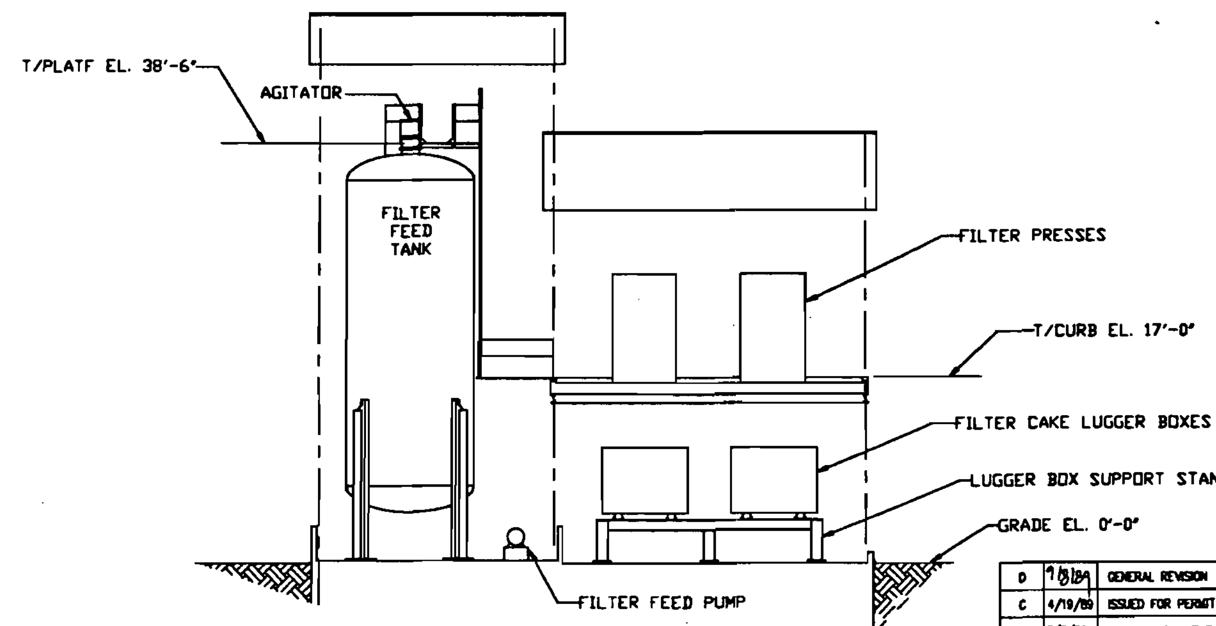

SECTION (B)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	WJH
C	4/19/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	1/3/89	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/5/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

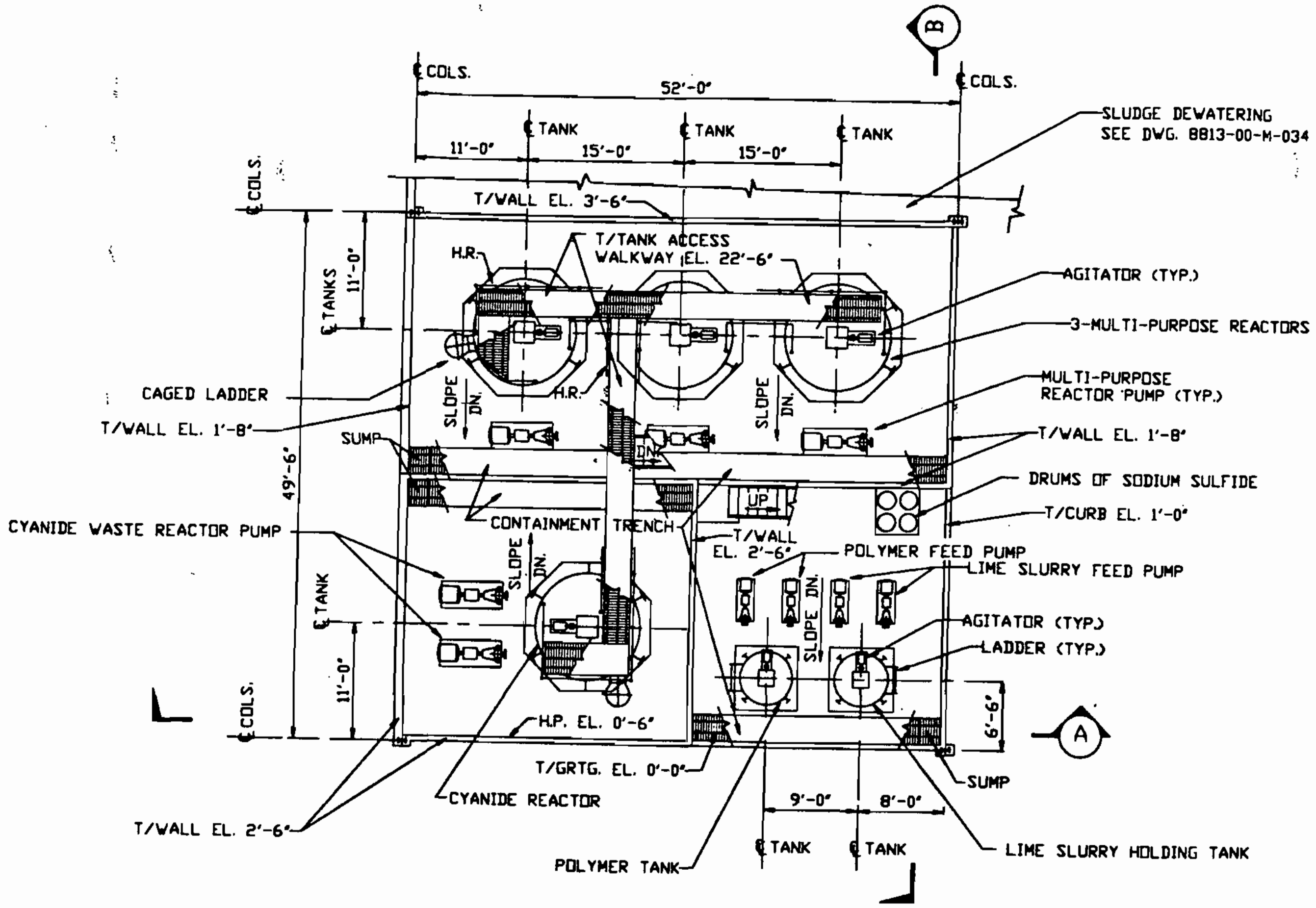
PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
INORGANIC TREATMENT
SLUDGE DEWATERING
PLANS & SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/3/89			8813-00-M-034	D
CHKD	DATE		DATE		

D-1

DATE PLOTTED: 9/8/89 FILE NAME: \8813\8813M034.DWG



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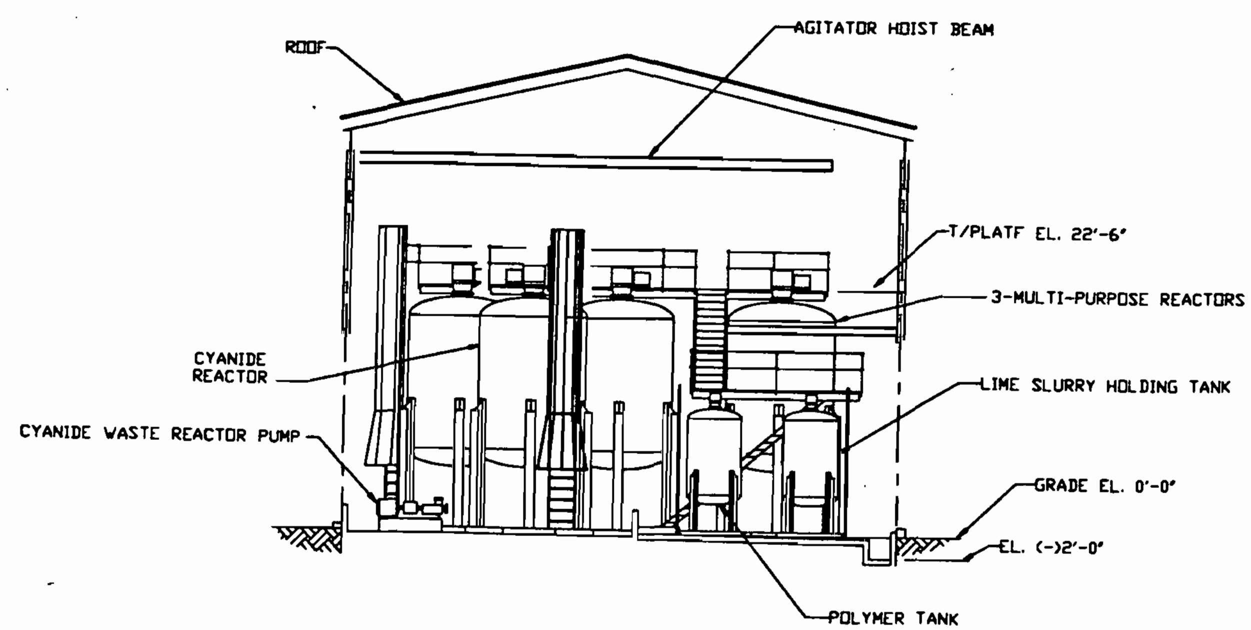

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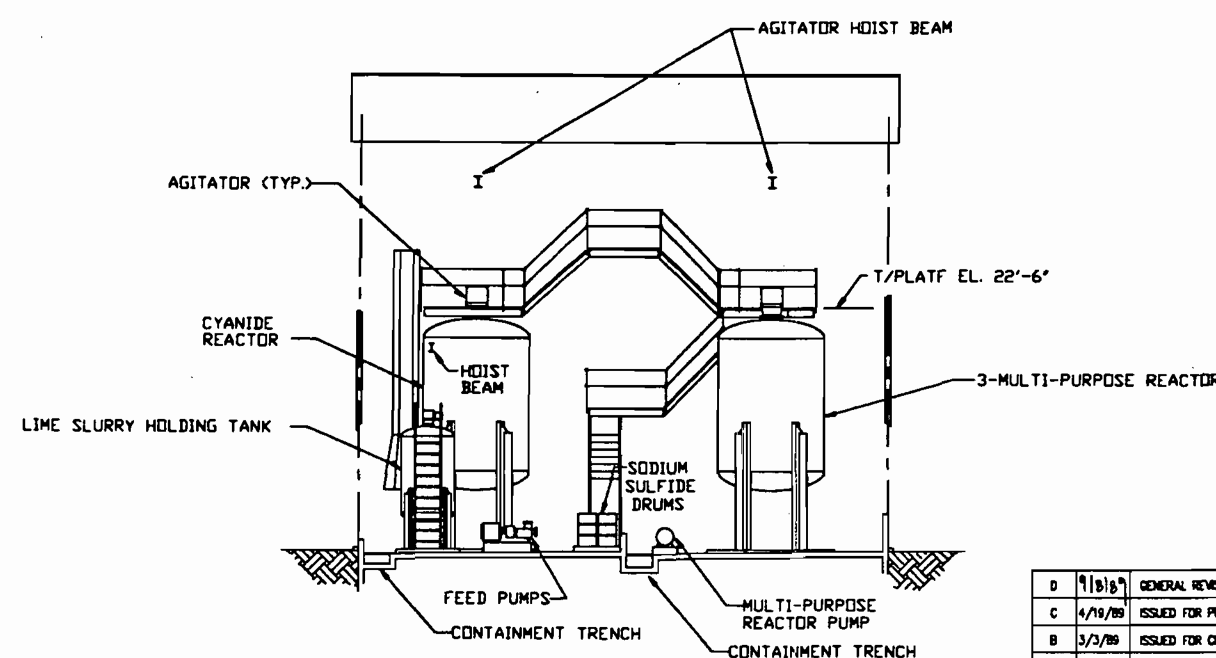

SECTION (B)

0 4' 8' 16'
SCALE

DICK M. MILLER
CERTIFICATE
No. 20927
STATE OF FLORIDA
REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
D	9/8/89	GENERAL REVISION	J.B.	WJH
C	4/19/89	ISSUED FOR PERMIT	M.K.	W.J.H.
B	3/3/89	ISSUED FOR CLIENT REVIEW	M.K.	W.J.H.
A	1/11/89	ISSUED FOR INTERNAL REVIEW	M.K.	W.J.H.

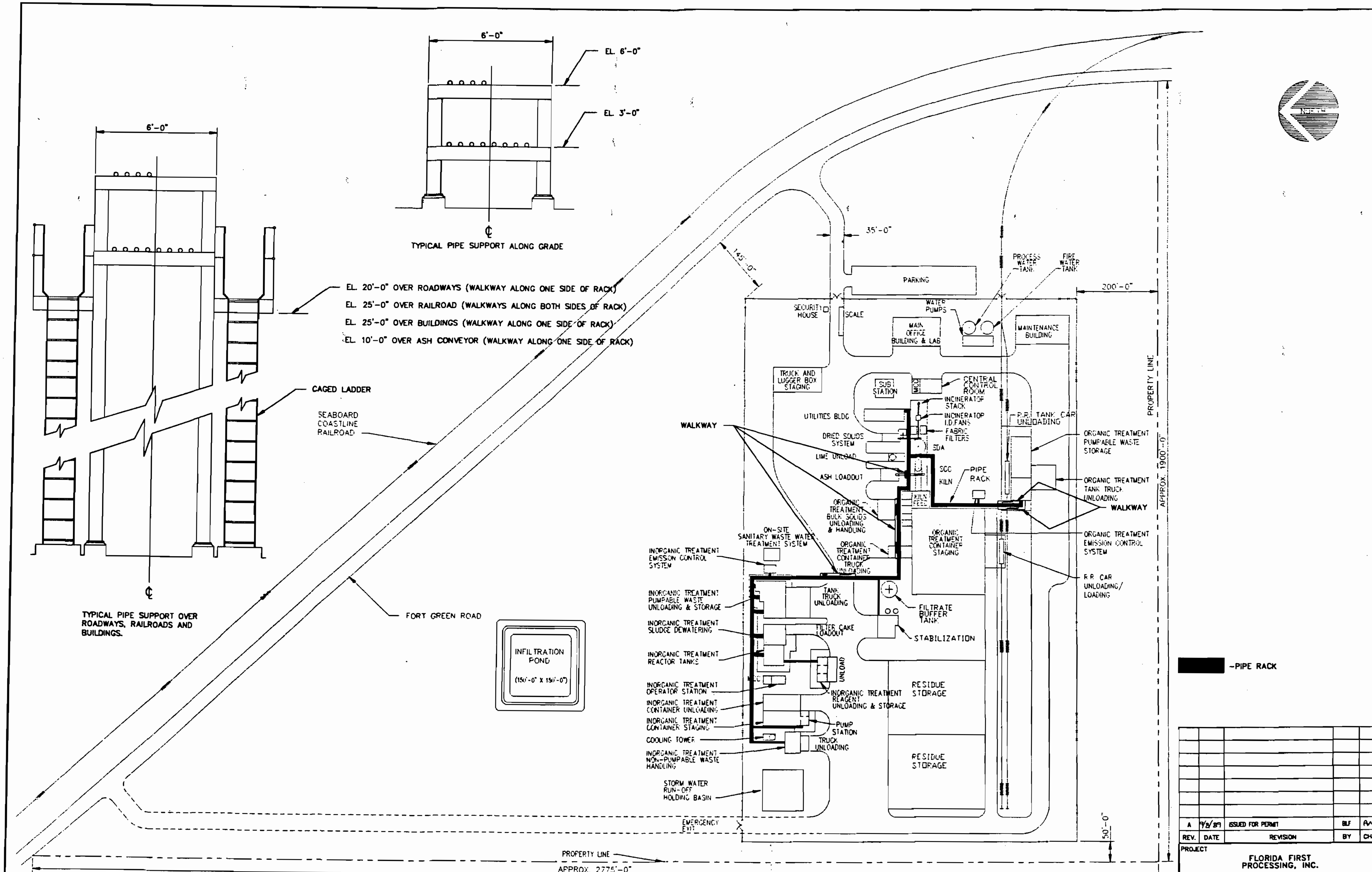
PROJECT
FLORIDA FIRST
PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
INORGANIC TREATMENT
REACTOR TANKS
PLAN AND SECTIONS

DRAWN M.K.	DATE 1/4/88	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-M-035	D

FILE NAME: \8813\8813M035.DWG
DATE PLOTTED: 9/8/89

D-1



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/15/89

0 20 100 200 400

SCALE

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
A	9/5/89	ISSUED FOR PERMIT	BJF	AWS

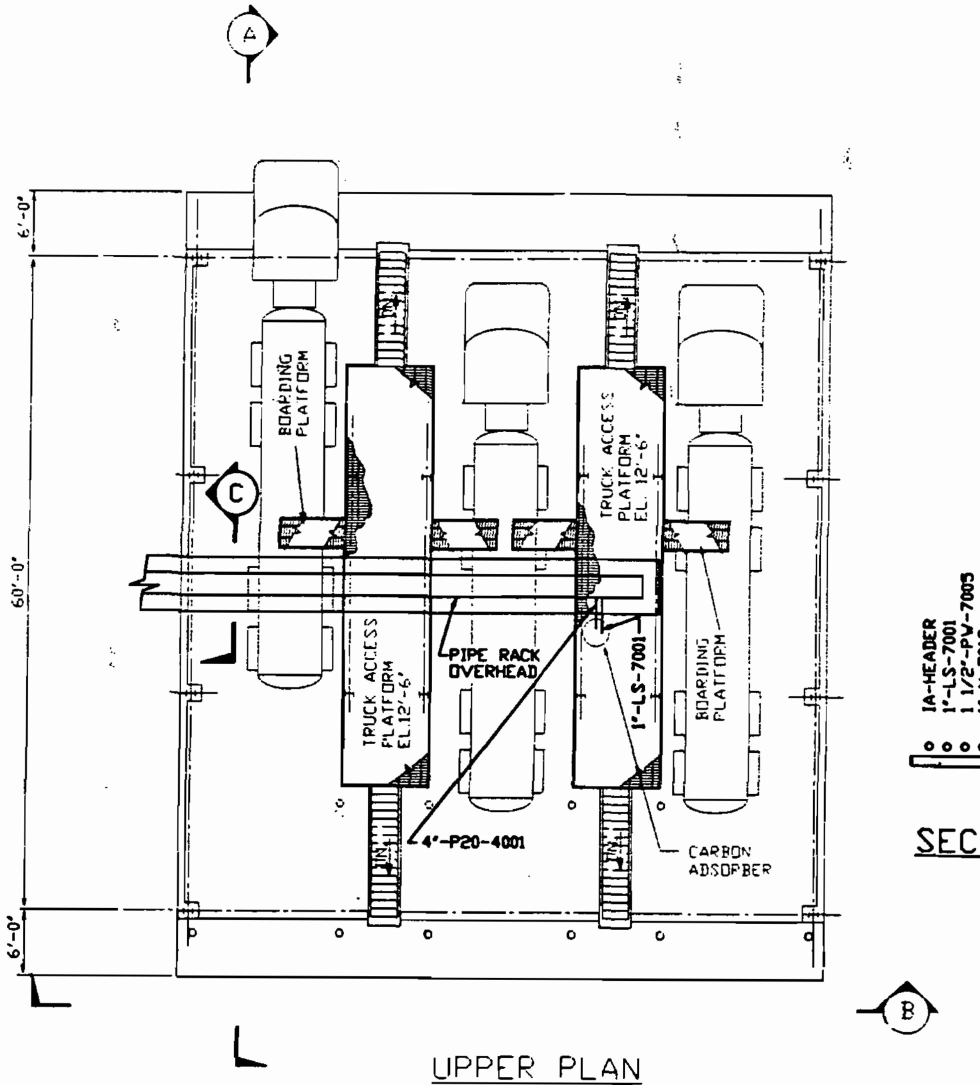
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: SITE PLAN PIPE RACK ARRANGEMENTS

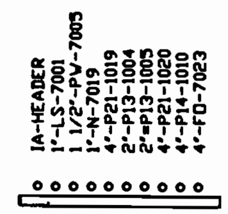
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-001	A
CHKD	DATE		DATE		

FILE NAME: 8813P001.DWG

A-3



UPPER PLAN



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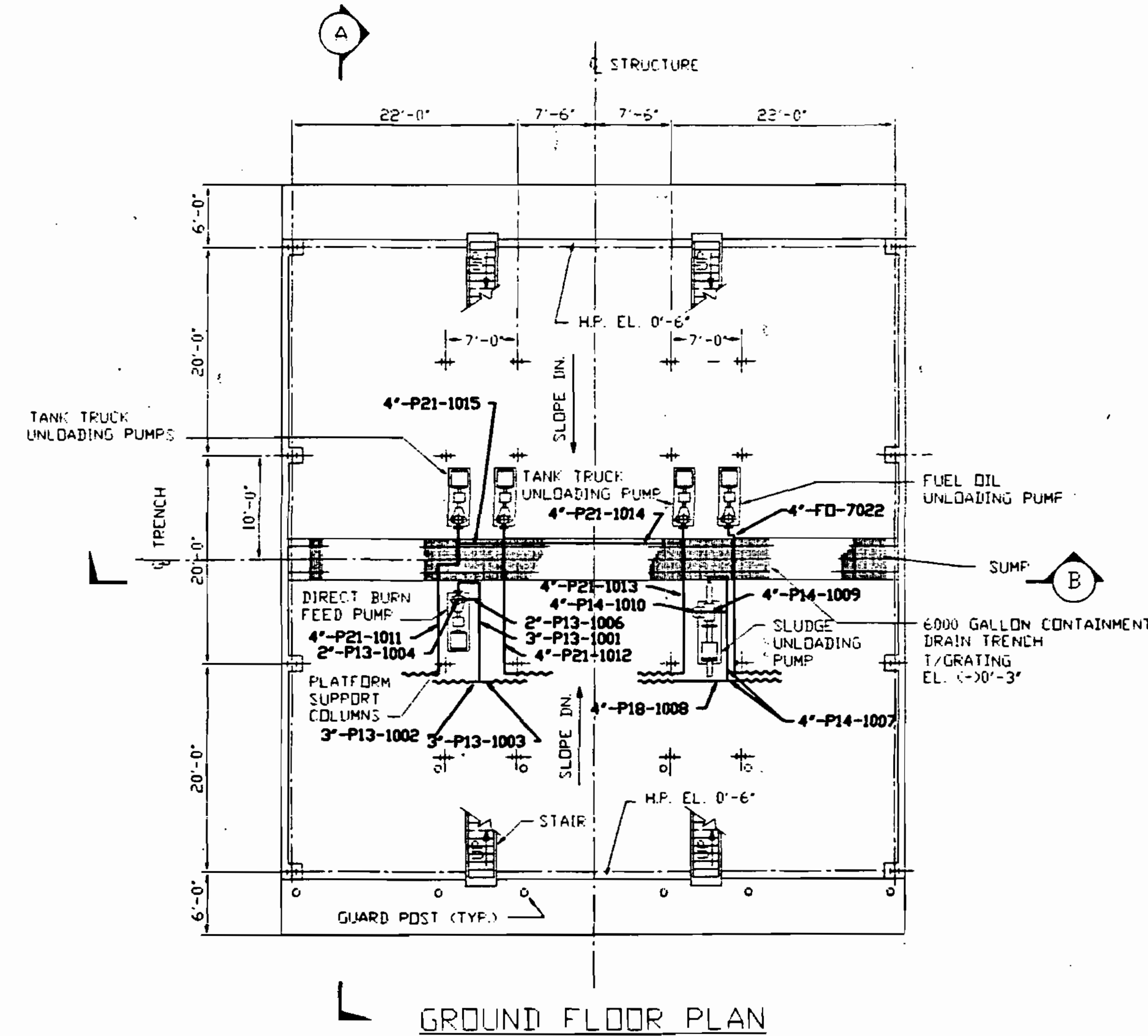
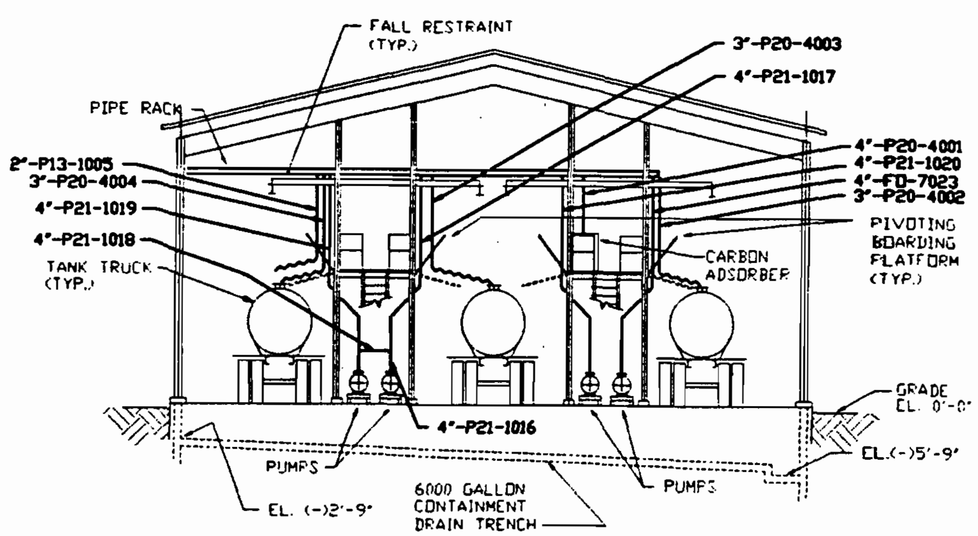


GROUND FLOOR PLAN



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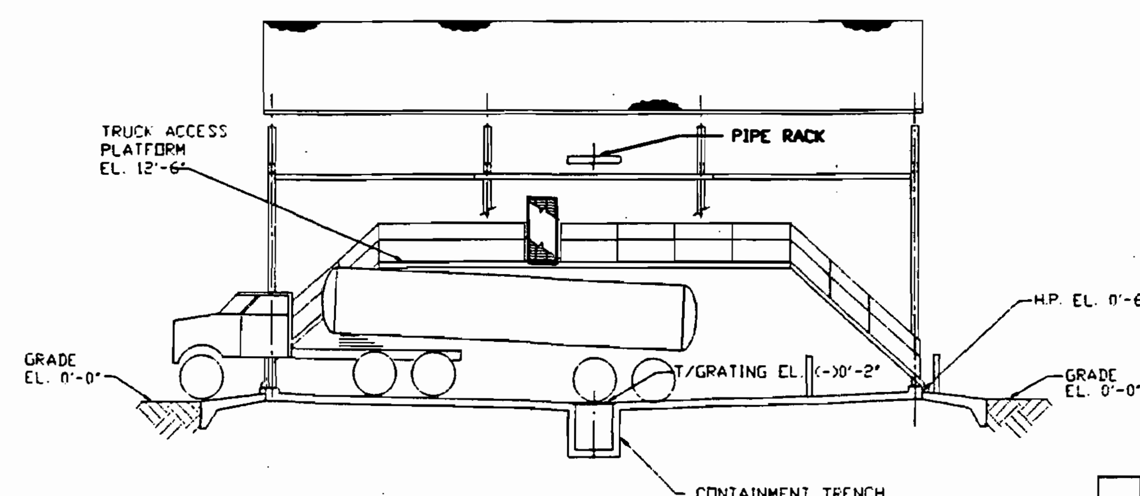

SECTION (A)

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BF	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT TANK TRUCK UNLOADING PLANS & SECTIONS WITH PIPING

International WasteEnergy Systems
ST. LOUIS, MO.

SCALE:

DRAWN GHB DATE 8/4/89 | APPD | DATE | CHKD | DATE

DRAWING NO. 8813-00-P-002 REV. A

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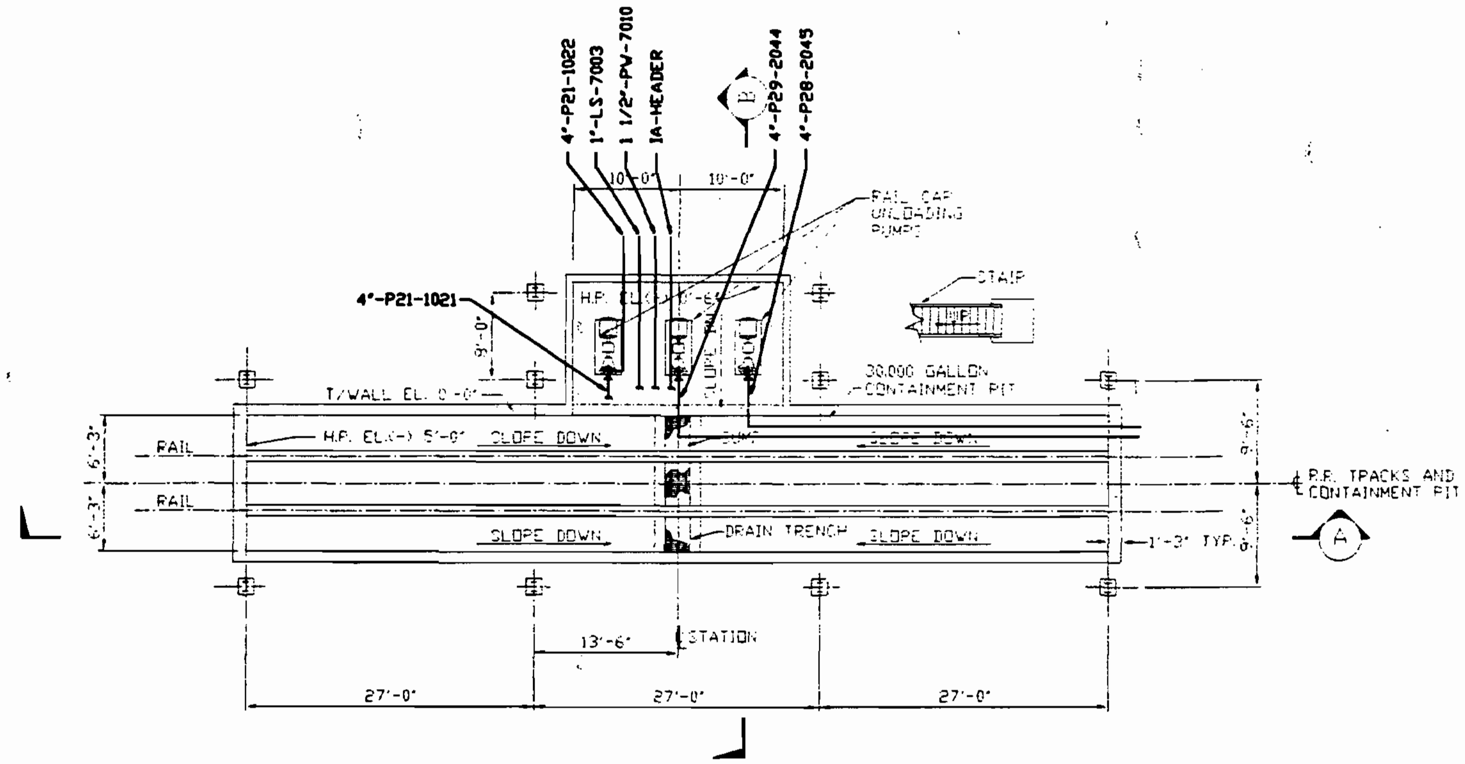
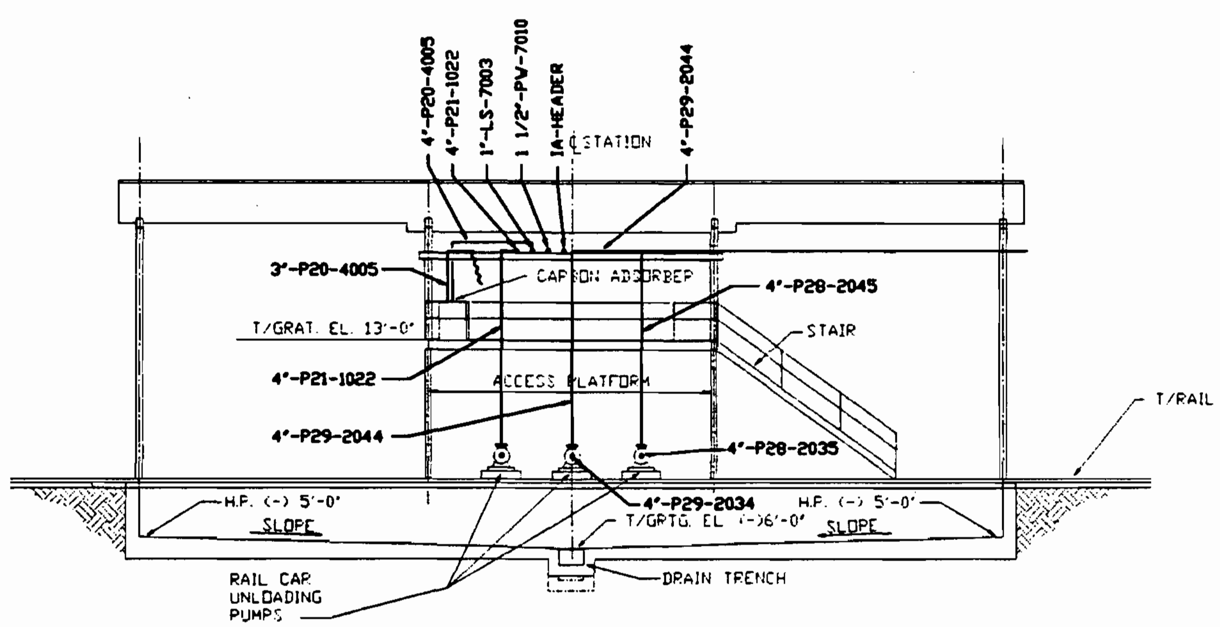
Dick M. Miller 9/25/89

A-5



PLAN



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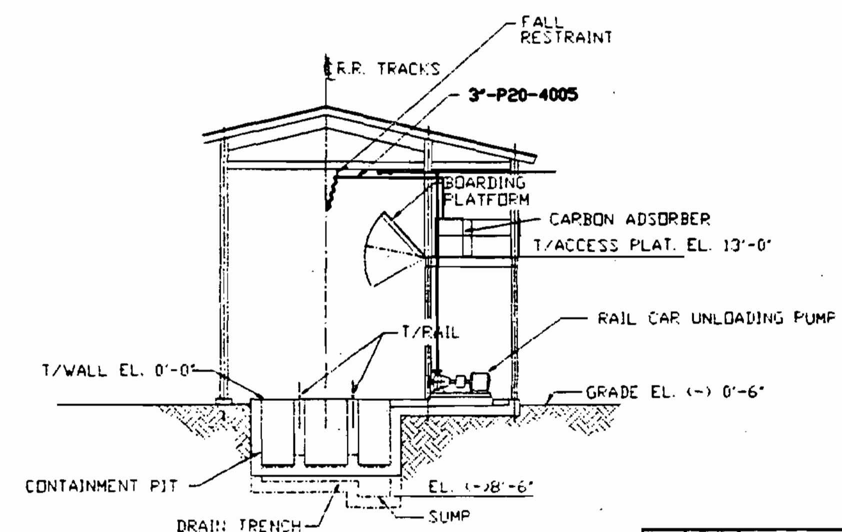

SECTION (B)

0 4' 8' 16'
SCALE

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Dick M. Miller 9/25/89

A	9/8/89	ISSUED FOR PERMIT	BJF	AMS
REV.	DATE	REVISION	BY	CHKD

SCALE:

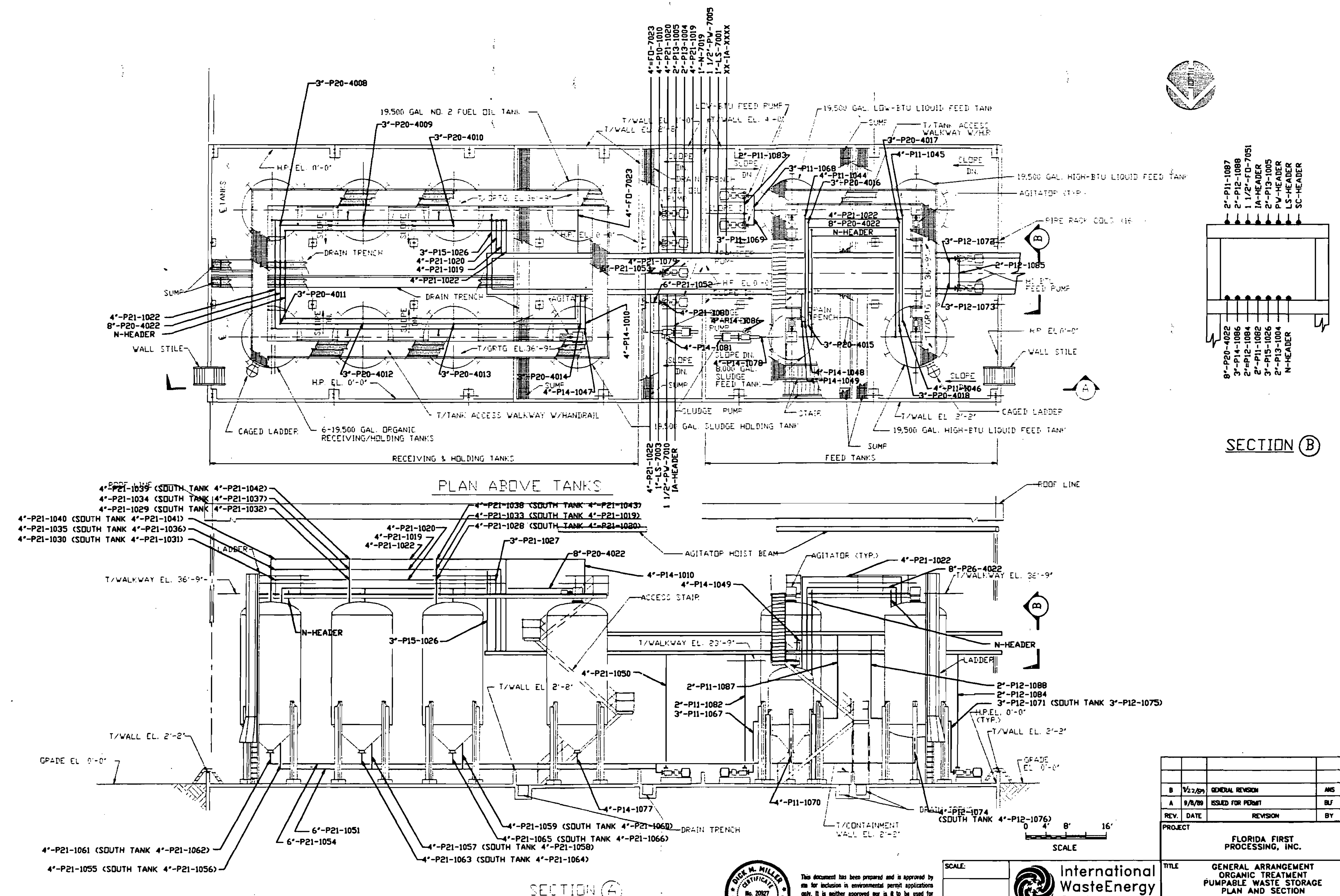
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT RAILROAD TANK CAR UNLOADING WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-003	A
CHKD	DATE		DATE		

DATE PLOTTED: 9/28/89 FILE NAME: \8813\P003.DWG



REV.	DATE	REVISION	BY	CHKD
B	1/22/89	GENERAL REVISION	AMS	AMS
A	9/8/89	ISSUED FOR PERMIT	BJF	AMS

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT PUMPABLE WASTE STORAGE PLAN AND SECTION WITH PIPING

International WasteEnergy Systems

ST. LOUIS, MO.

SCALE:

DRAWN DHB | DATE 7/27/89 | CHKD | DATE | APPD | DATE | DRAWING NO. 8813-00-P-004 | REV. B

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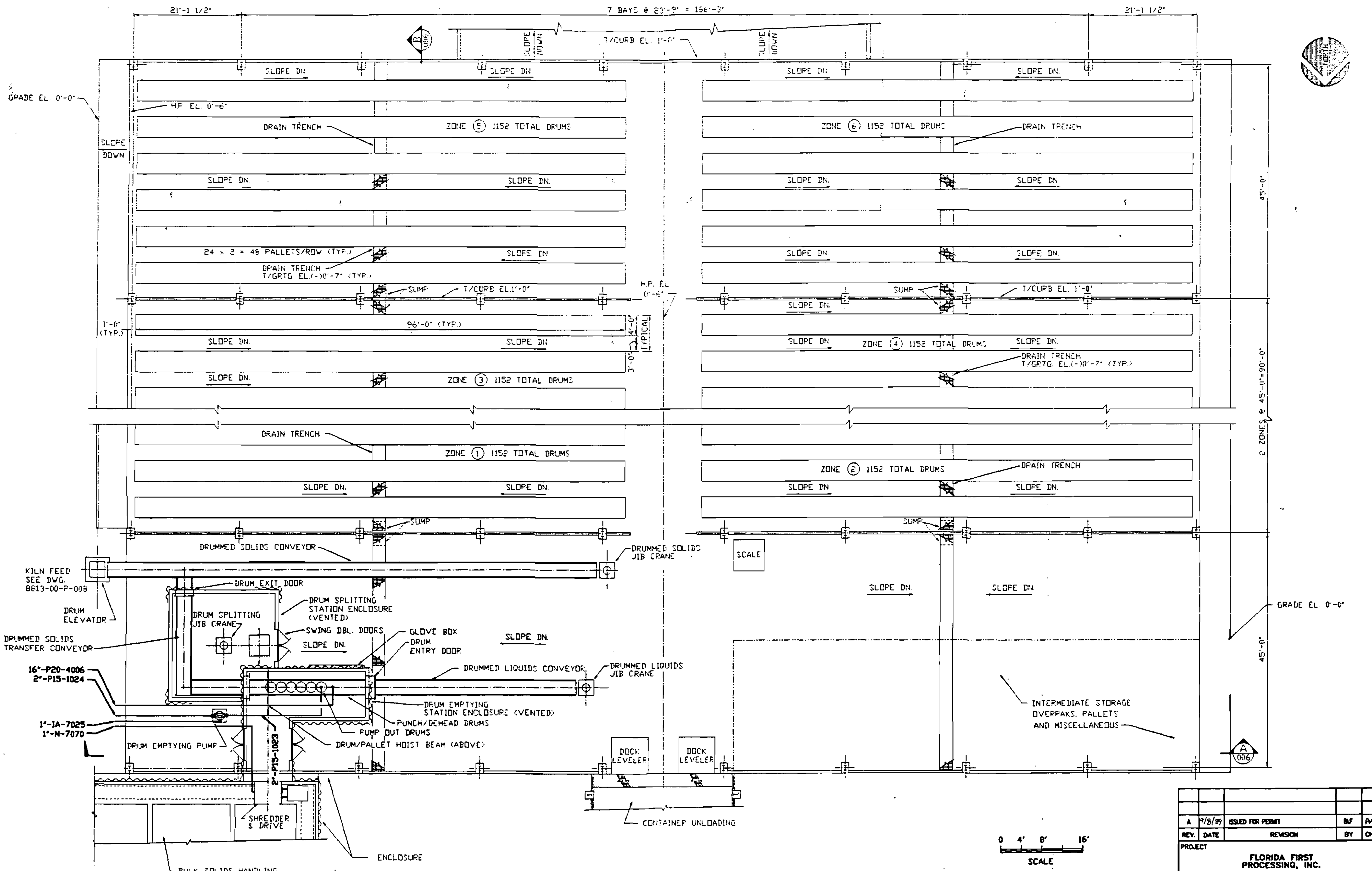
Dick M. Miller 9/25/89

FILE NAME: \8813\8813P004.DWG



REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BF	AWS

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems

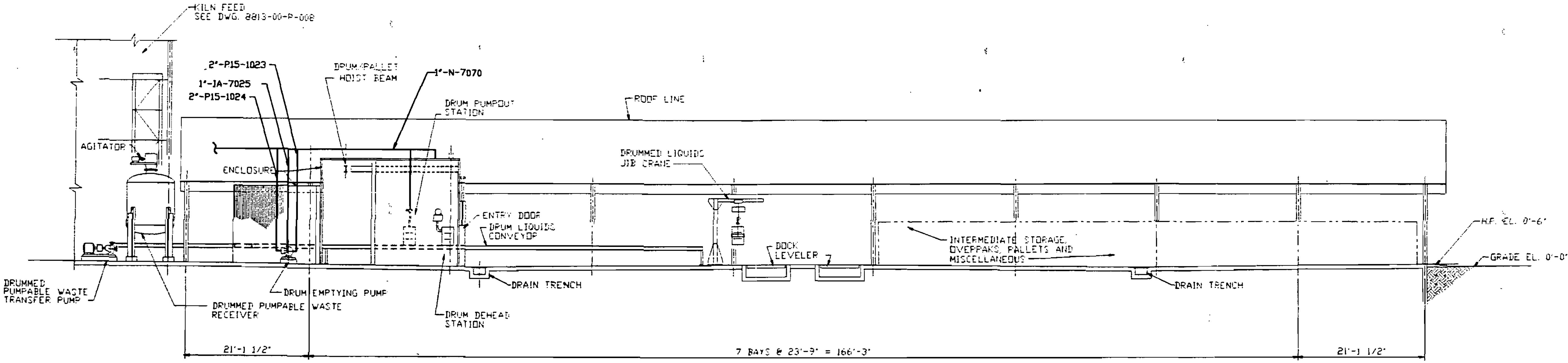
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT ORGANIC TREATMENT CONTAINER STAGING PLAN WITH PIPING

DRAWN CHB DATE 7/27/89 | APPD | DATE | CHKD | DATE | DRAWING NO. 8813-00-P-005 | REV. A

A-3



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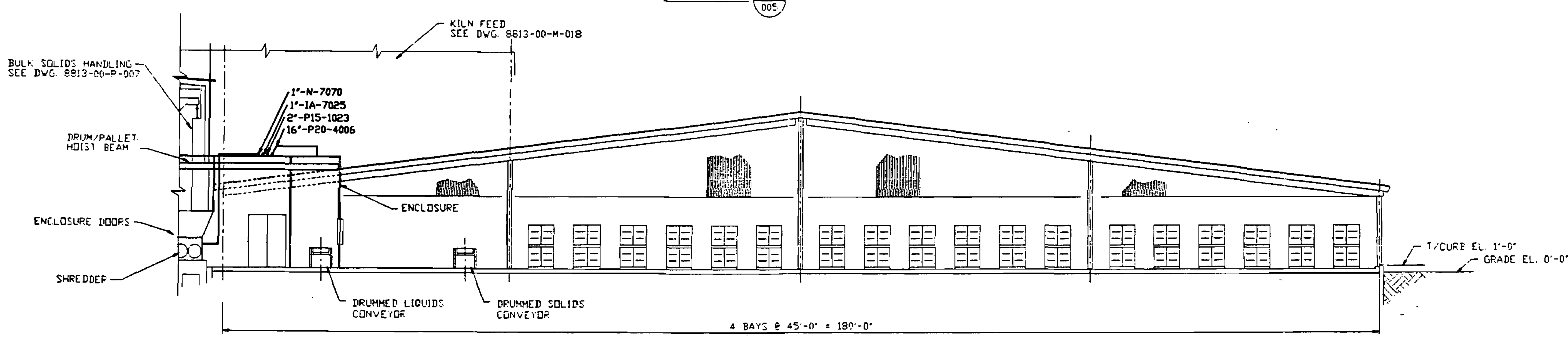

SECTION (B / 005)

0 4' 8' 16'
SCALE

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[signature] 9/26/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

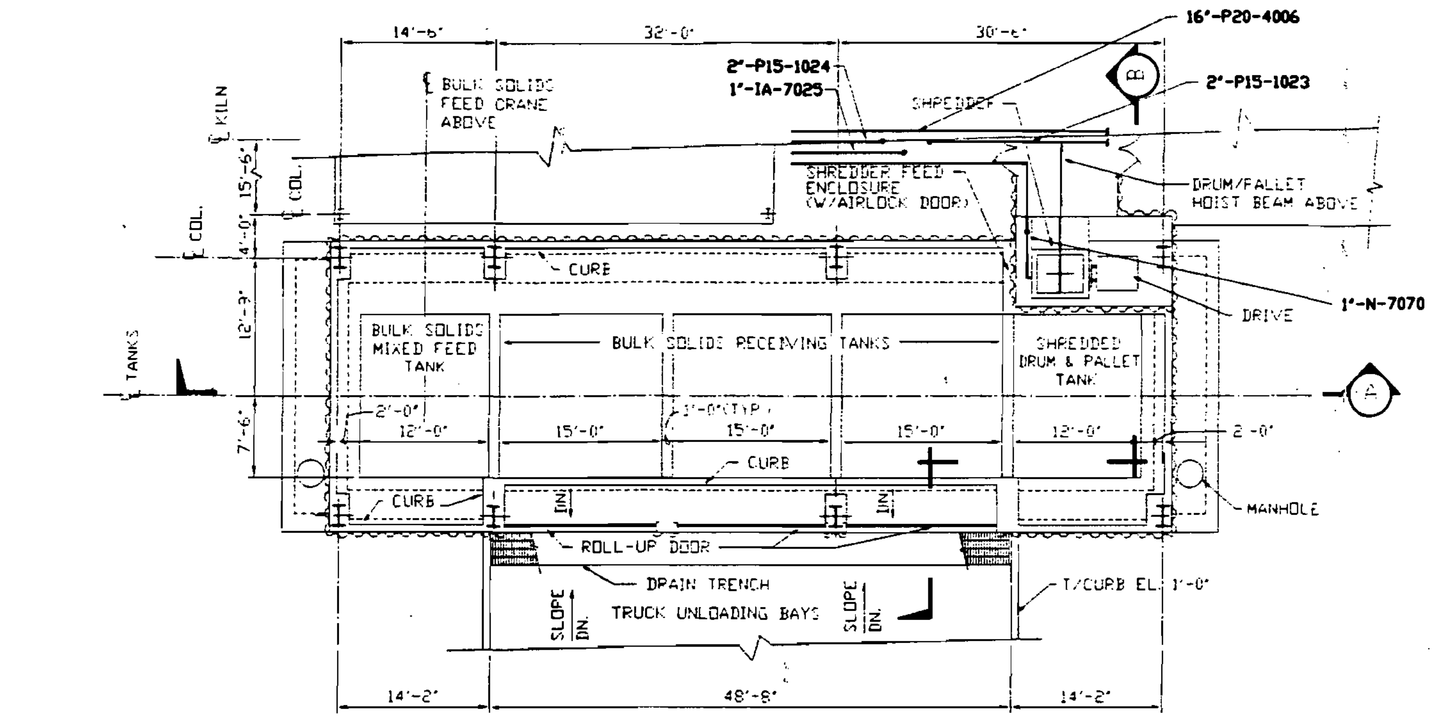
REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BLF	AJS

PROJECT
FLORIDA FIRST PROCESSING, INC.

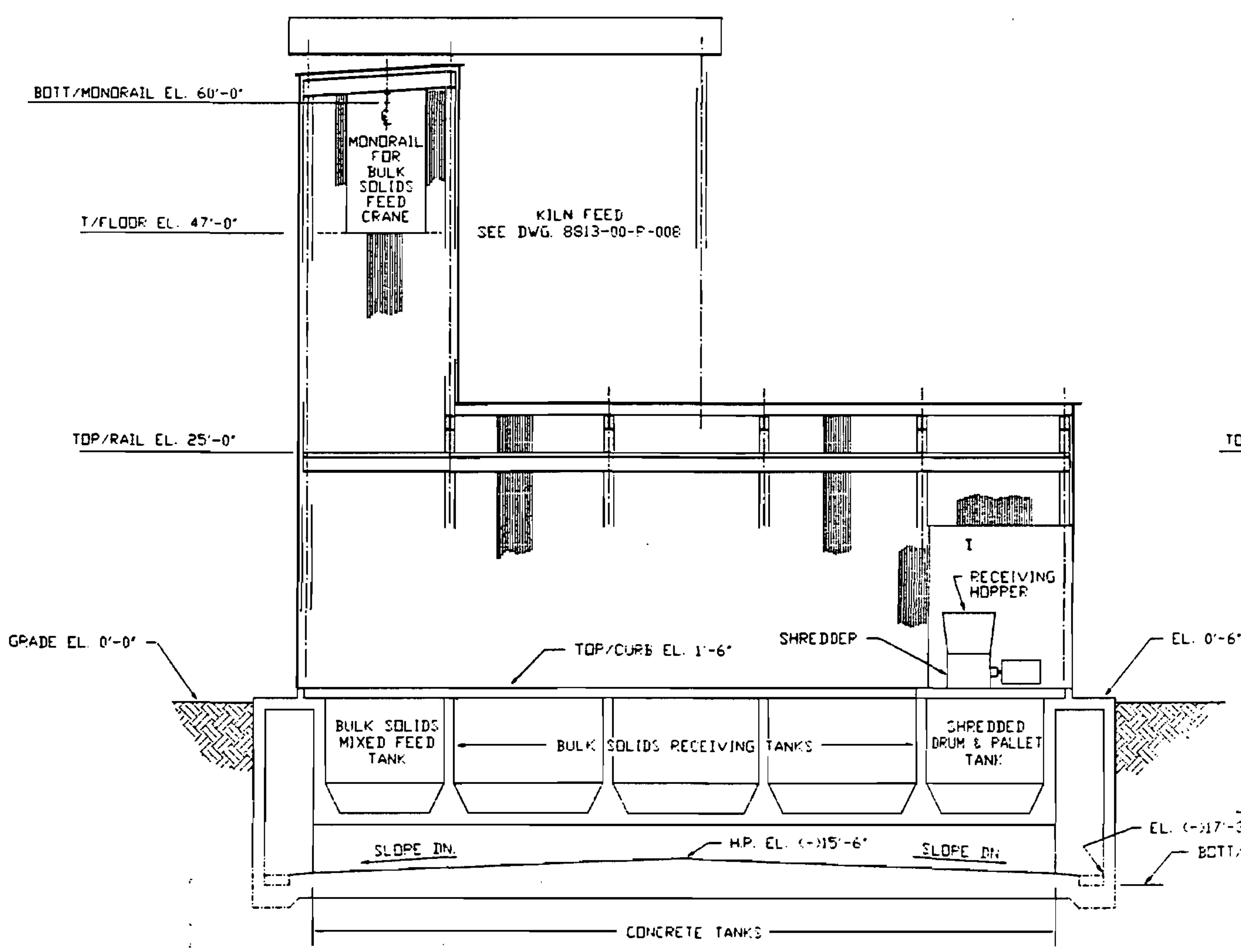
TITLE
GENERAL ARRANGEMENT-ORGANIC TREATMENT CONTAINER STAGING SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
BLF	8/10/89			8813-00-P-006	A
CHKD	DATE		DATE		

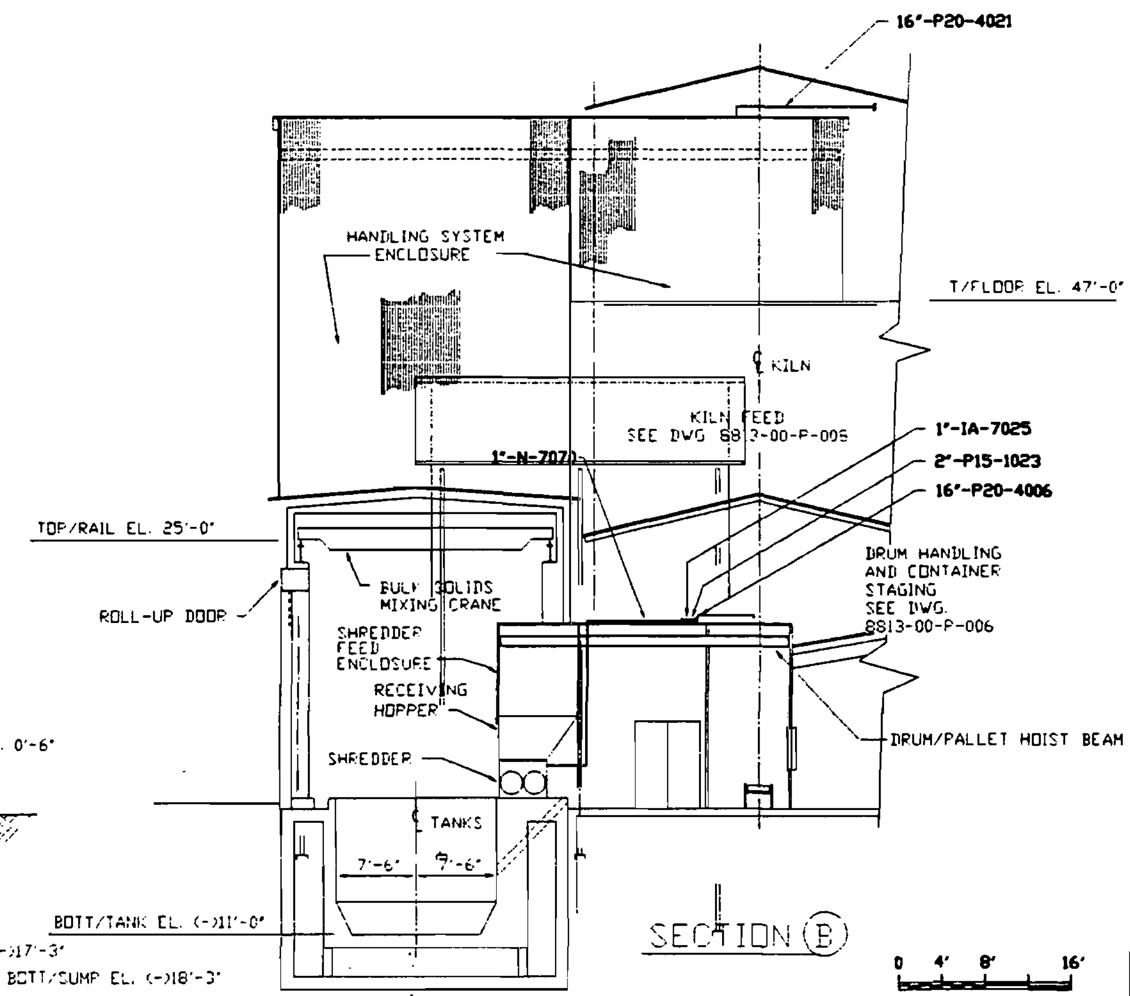
DATE PLOTTED: 9/7/89 FILE NAME: \8813\8813PO06.DWG



PLAN ABOVE TANKS



SECTION (A)



SECTION (B)

0 4' 8' 16'

SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/29/89

SCALE:

International WasteEnergy Systems

ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BJF	MJS

PROJECT

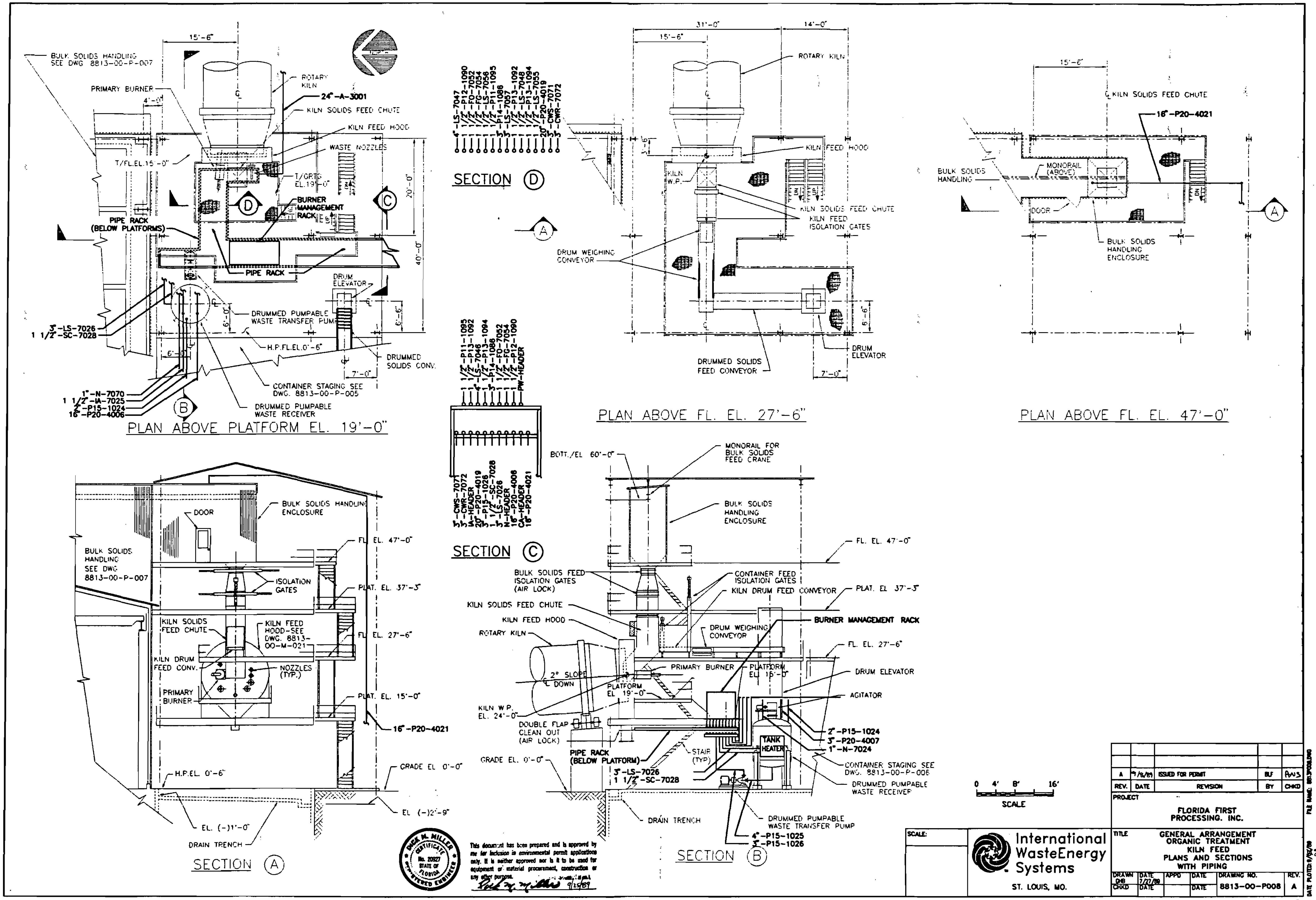
FLORIDA FIRST PROCESSING, INC.

TITLE

GENERAL ARRANGEMENT
ORGANIC TREATMENT
BULK SOLIDS UNLOADING & HANDLING
PLAN AND SECTIONS
WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
BJF	8/08/89			8813-00-P-007	A
CHKD	DATE		DATE		

DATE PLOTTED: 9/07/89 FILE NAME: \8813\8813P007.DWG


PLAN ABOVE PLATFORM EL. 19'-0"
PLAN ABOVE FL. EL. 27'-6"
PLAN ABOVE FL. EL. 47'-0"
SECTION A
SECTION B
SECTION C
SECTION D
BULK SOLIDS HANDLING SEE DWG 8813-00-P-007
PRIMARY BURNER
ROTARY KILN
24"-A-3001
KILN SOLIDS FEED CHUTE
KILN FEED HOOD
WASTE NOZZLES
T/FL.EL.15'-0"
T/GRTG EL.19'-0"
BURNER MANAGEMENT RACK
PIPE RACK (BELOW PLATFORMS)
PIPE RACK
DRUM ELEVATOR
DRUMMED PUMPABLE WASTE TRANSFER PUMP
H.P.FL.EL.0'-6"
DRUMMED SOLIDS CONV.
CONTAINER STAGING SEE DWG. 8813-00-P-005
DRUMMED PUMPABLE WASTE RECEIVER
3"-LS-7026
1 1/2"-SC-7028
1"-N-7070
1 1/2"-IA-7025
2"-P15-1024
16"-P20-4006
KILN W.P.
KILN SOLIDS FEED CHUTE
KILN FEED ISOLATION GATES
DRUM WEIGHING CONVEYOR
DRUMMED SOLIDS FEED CONVEYOR
16"-P20-4021
BULK SOLIDS HANDLING
MONORAIL (ABOVE)
DOOR
BULK SOLIDS HANDLING ENCLOSURE
MONORAIL FOR BULK SOLIDS FEED CRANE
BOTT./EL 60'-0"
FL. EL. 47'-0"
PLAT. EL 37'-3"
FL. EL. 27'-6"
PLAT. EL. 15'-0"
GRADE EL 0'-0"
EL (-)2'-9"
EL. (-)1'-0"
DRAIN TRENCH
ISOLATION GATES
KILN FEED HOOD-SEE DWG. 8813-00-M-021
KILN DRUM FEED CONV.
NOZZLES (TYP.)
BULK SOLIDS FEED ISOLATION GATES (AIR LOCK)
CONTAINER FEED ISOLATION GATES
KILN DRUM FEED CONVEYOR
DRUM WEIGHING CONVEYOR
2° SLOPE DOWN
PLATFORM EL 19'-0"
KILN W.P. EL. 24'-0"
DOUBLE FLAP CLEAN OUT (AIR LOCK)
STAIR (TYP)
AGITATOR
TANK HEATER
2"-P15-1024
3"-P20-4007
1"-N-7024
CONTAINER STAGING SEE DWG. 8813-00-P-006
DRUMMED PUMPABLE WASTE TRANSFER PUMP
4"-P15-1025
3"-P15-1026
SCALE 0 4' 8' 16'
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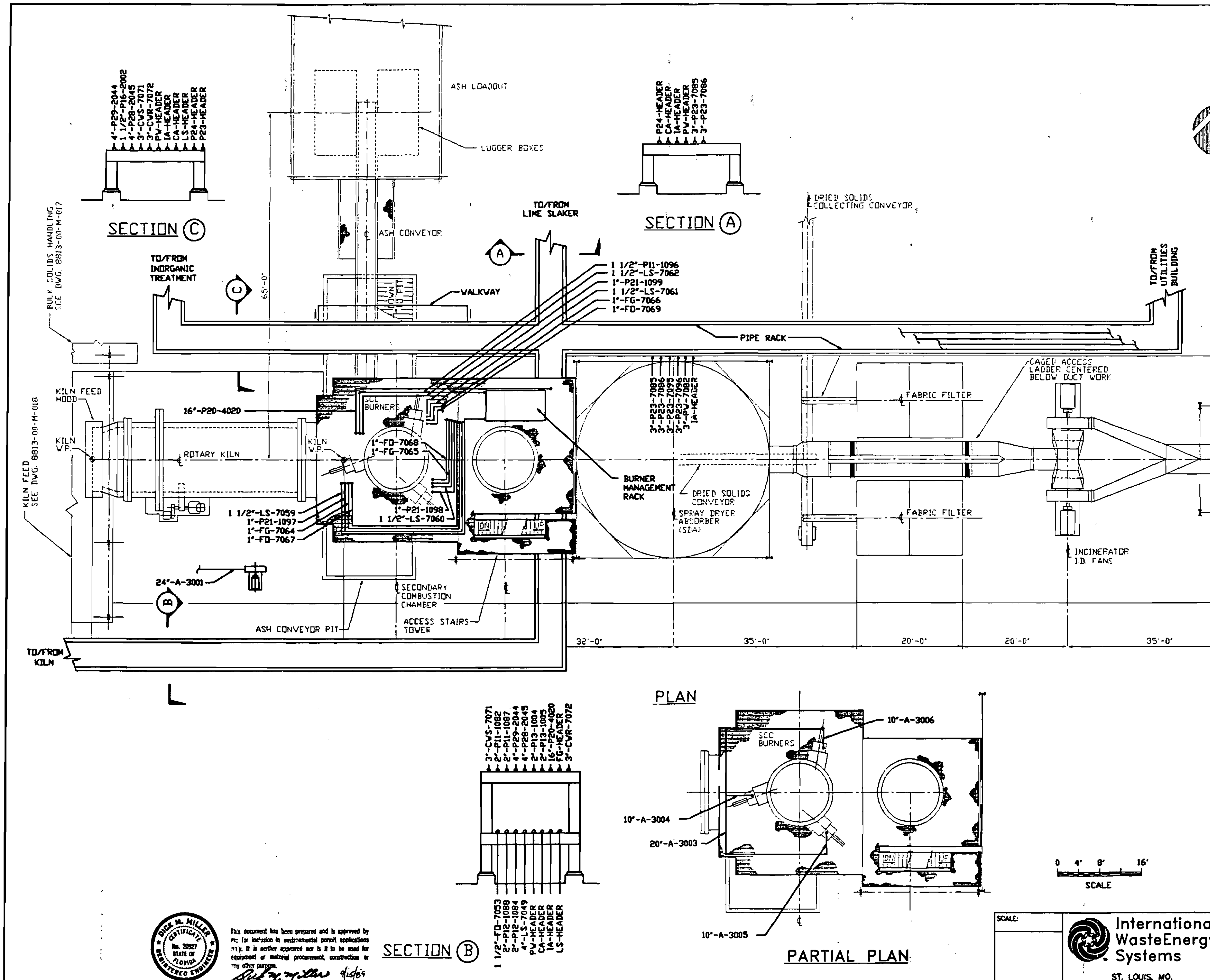
9/25/89
A 9/5/89 ISSUED FOR PERMIT
REV. DATE REVISION BY CHKD
PROJECT FLORIDA FIRST PROCESSING, INC.
International WasteEnergy Systems ST. LOUIS, MO.
TITLE GENERAL ARRANGEMENT ORGANIC TREATMENT KILN FEED PLANS AND SECTIONS WITH PIPING
DRAWING NO. 8813-00-P008 REV. A
A-24



REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BLF	ANS

SCALE:

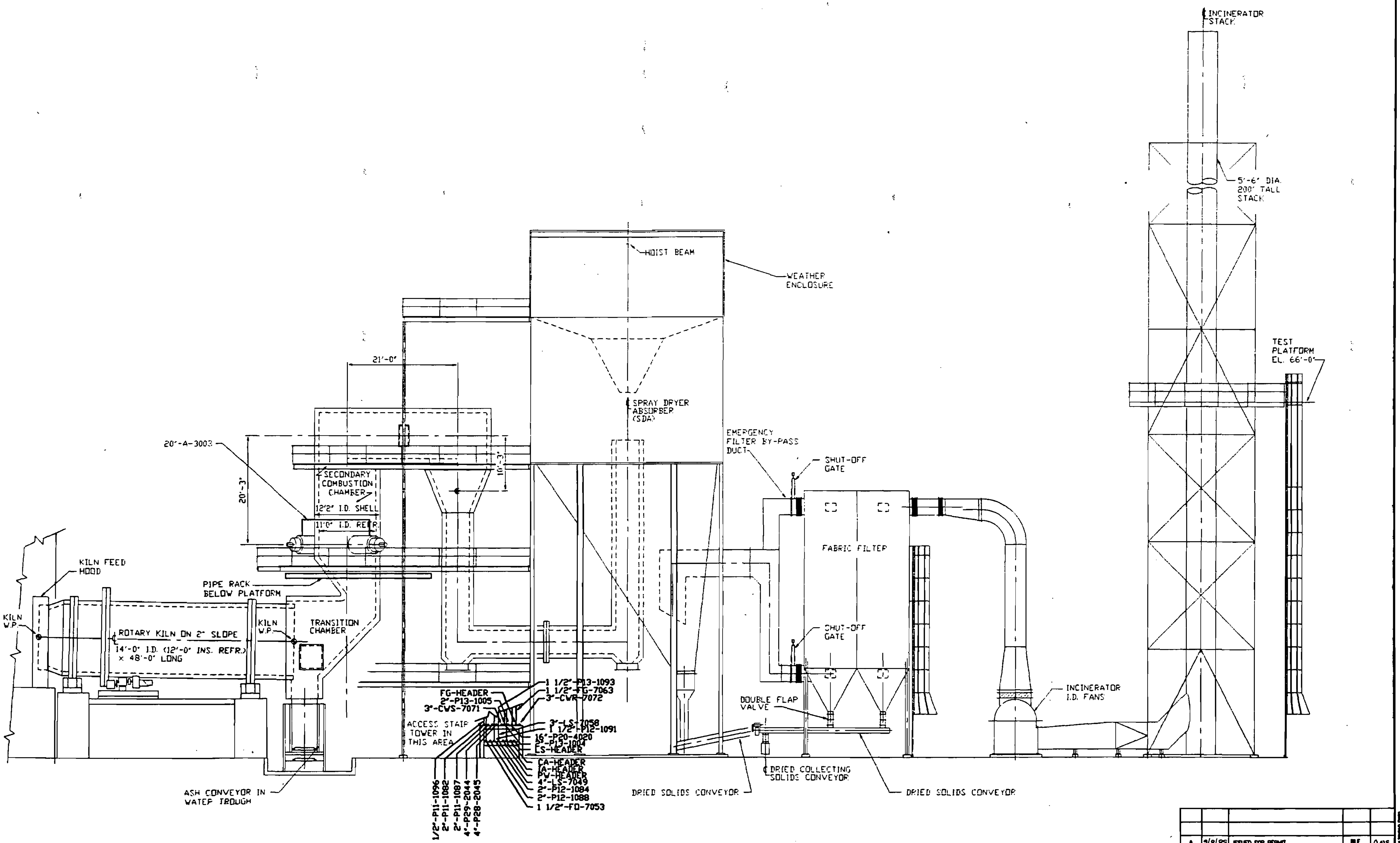
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
KILN AND GAS CLEANING
PLAN
WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-009	A
CHKD	DATE		DATE		

FILE NAME: \8813\8813P009.DWG
DATE PLOTTED: 9/8/89



ELEVATION

0 4' 8' 16'
SCALE

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BLF	A.N.S.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
KILN AND GAS CLEANING
ELEVATION
WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
BLF	8/07/89			8813-00-P-010	A
CHKD	DATE		DATE		

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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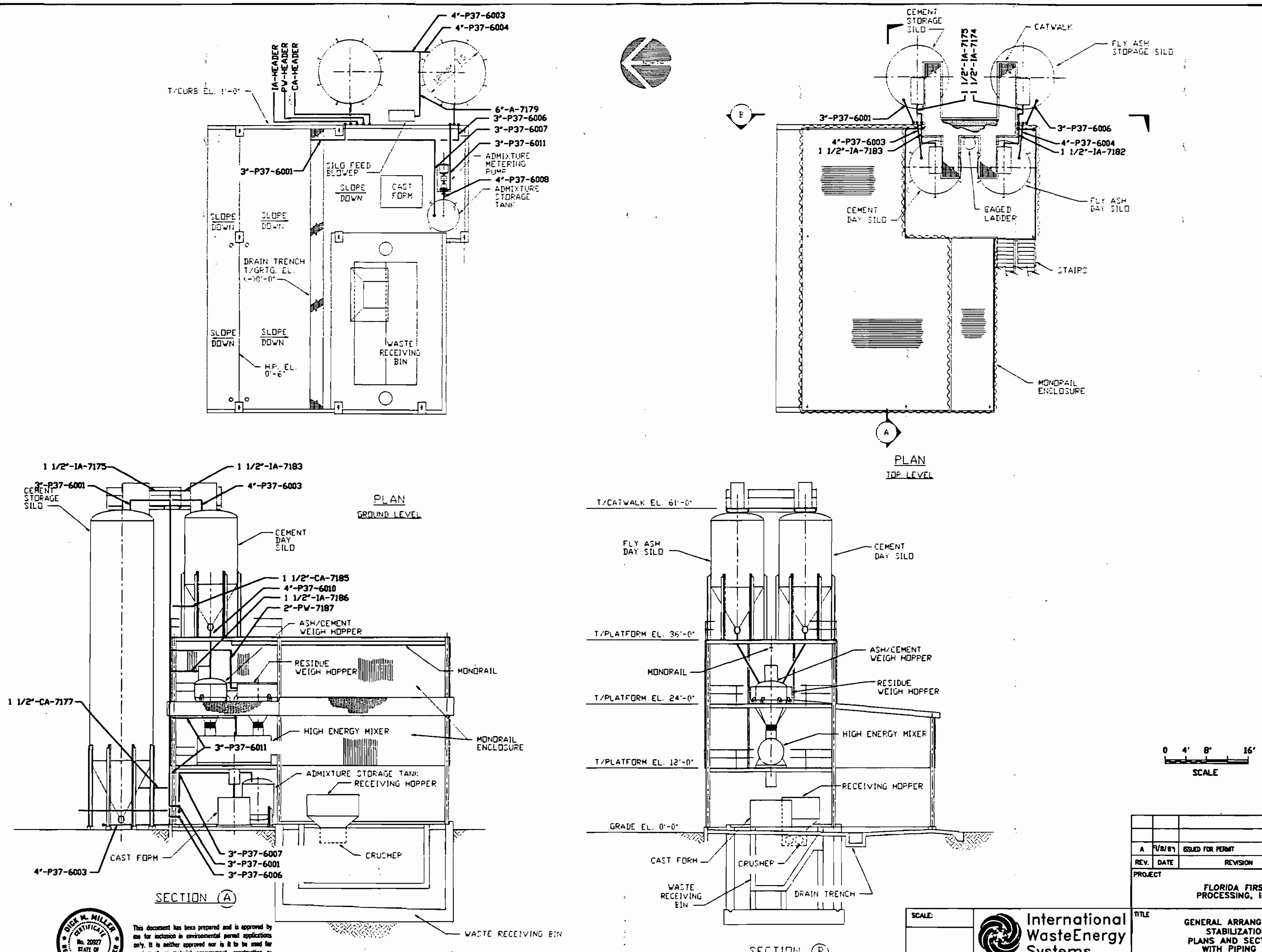
Dick M. Miller 9/25/89

FILE NAME: \8813\8813P010.DWG
DATE PLOTTED: 9/8/89



SCALE: 0 4' 8' 16'

DICK M. MILLER CERTIFICATE No. 20327 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BJ	PWS

SCALE:

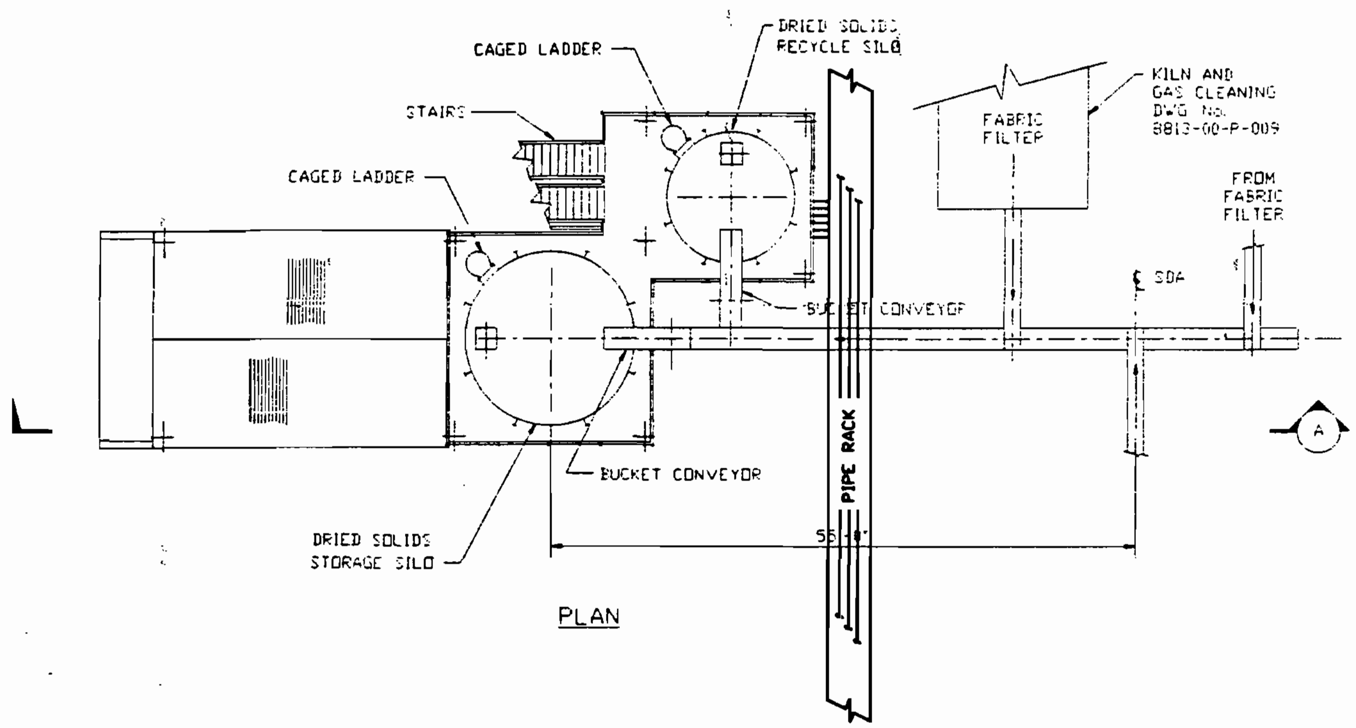
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

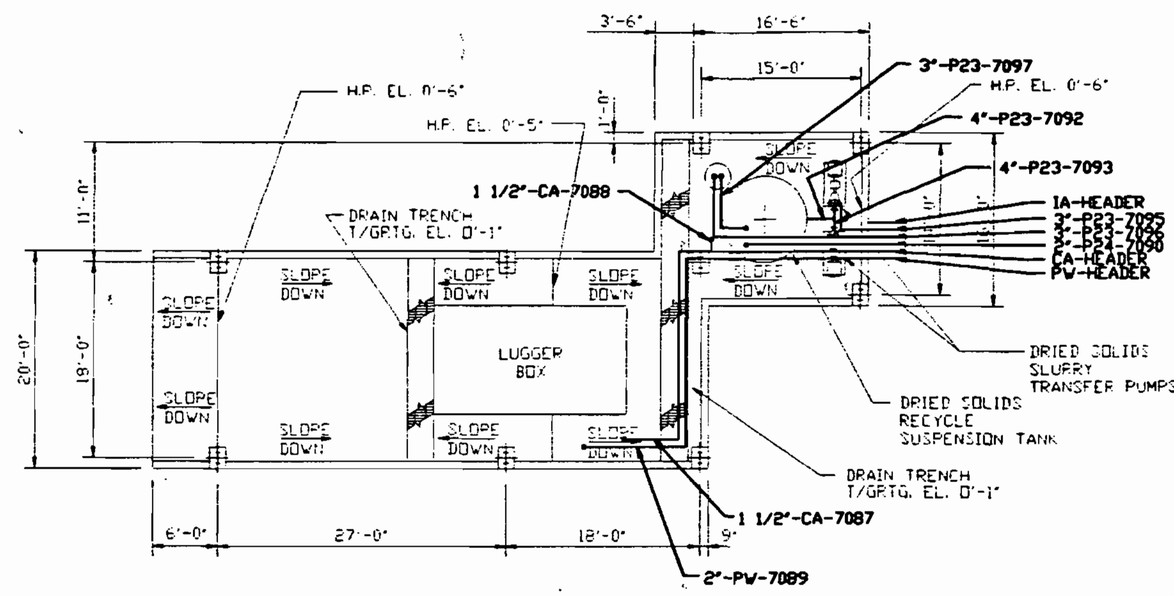
TITLE: GENERAL ARRANGEMENT STABILIZATION PLANS AND SECTIONS WITH PIPING

DRAWN GHB DATE 7/27/89 | CHKD DATE | APPD DATE | DATE | DRAWING NO. 8813-00-P-011 | REV. A

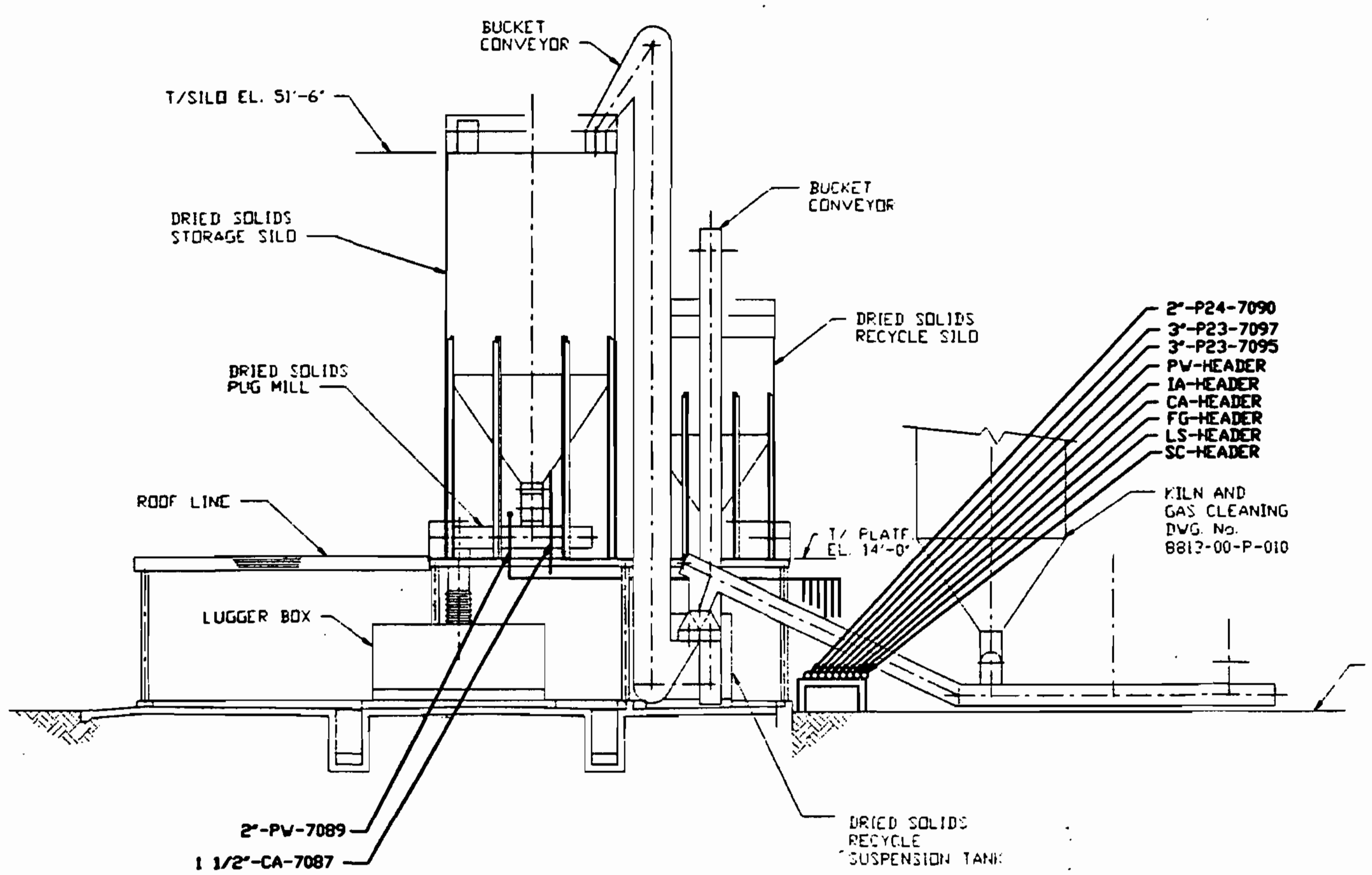
DATE PLOTTED: 9/08/89



PLAN



PLAN
GROUND LEVEL



SECTION (A)

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 4/25/89

SCALE:

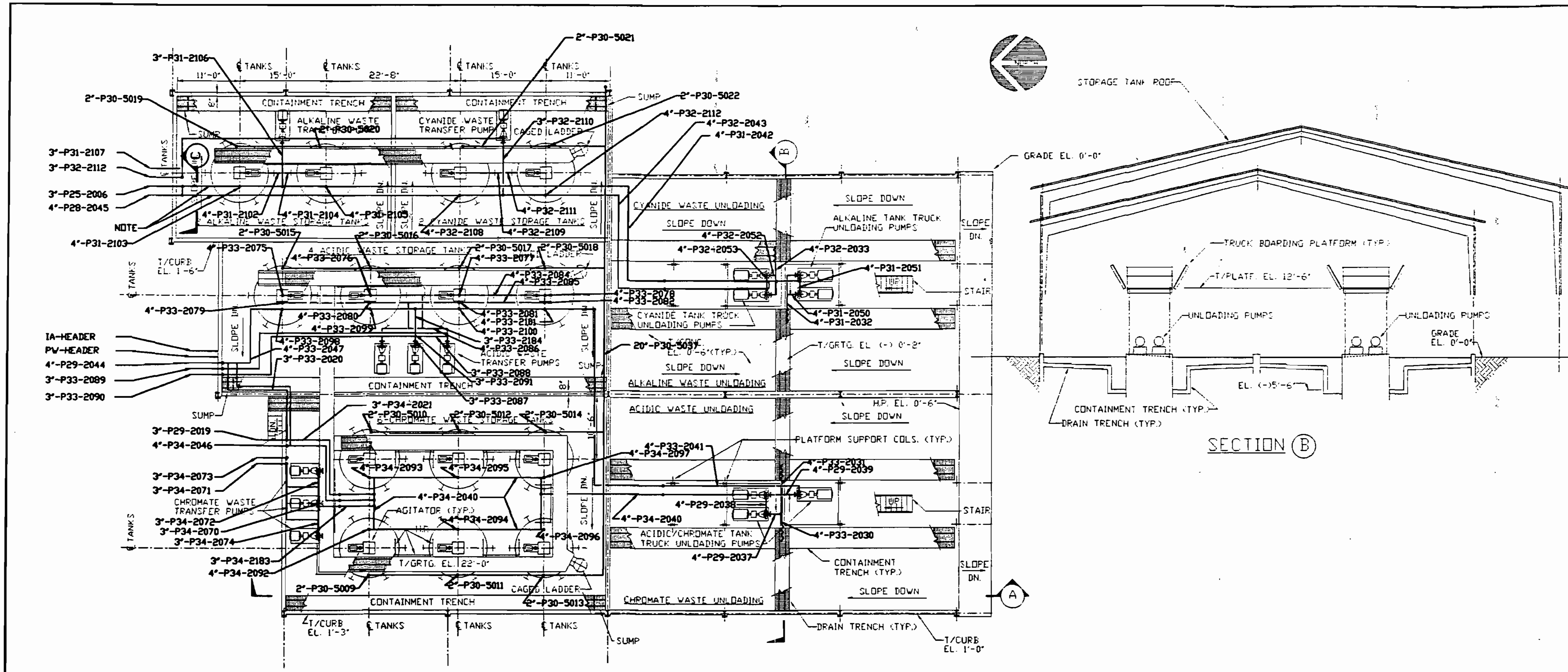
International WasteEnergy Systems
ST. LOUIS, MO.

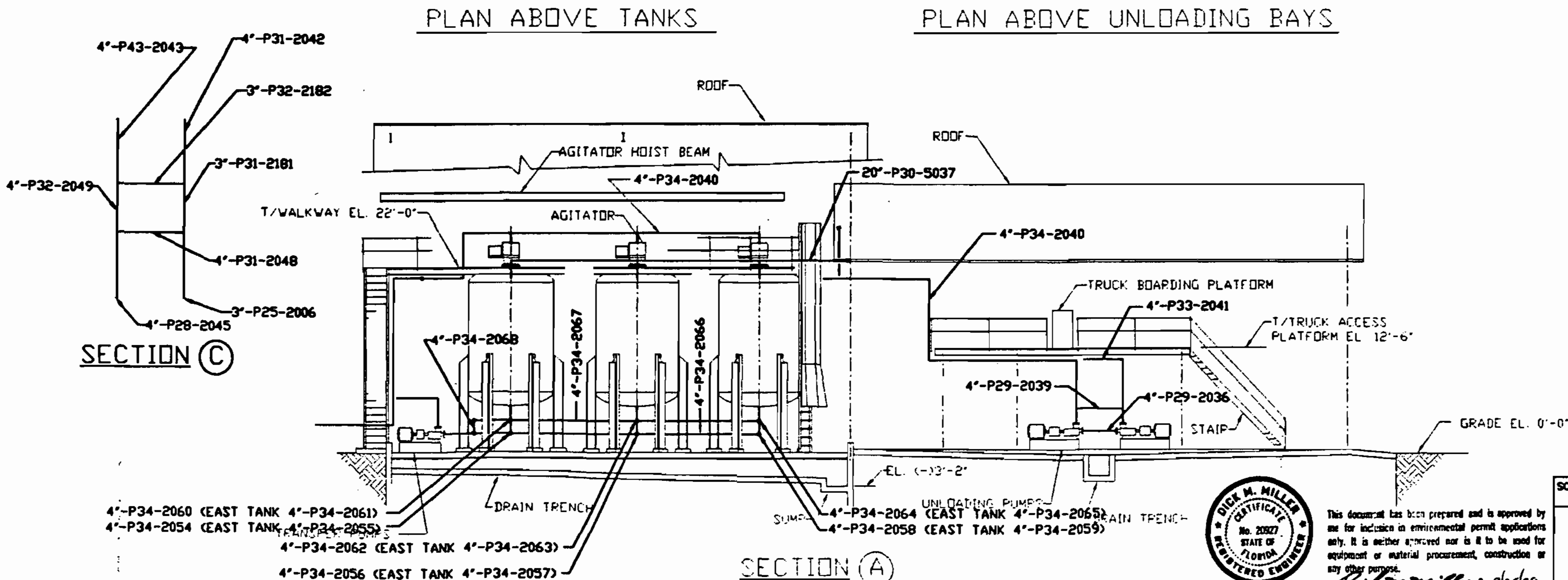
REV.	DATE	REVISION	BY	CHKD
A	9/9/89	ISSUED FOR PERMIT	B.F.	AAS

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
GENERAL ARRANGEMENT
ORGANIC TREATMENT
DRIED SOLIDS SYSTEM
PLANS AND SECTIONS
WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
B.F.	8/07/89			8813-00-P-012	A
CHKD	DATE		DATE		





0 4' 8' 16'
SCALE

NOTE:
ALKALINE PIPE WILL HAVE DRIP PAN ABOVE CYANIDE STORAGE AREA TO DIRECT SPILLS TO THE ALKALINE STORAGE AREA.
CYANIDE PIPE WILL HAVE DRIP PAN ABOVE ALKALINE STORAGE AREA TO DIRECT SPILLS TO THE CYANIDE STORAGE AREA.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

REV.	DATE	REVISION	BY	CHKD
A	9/9/89	ISSUED FOR PERMIT		

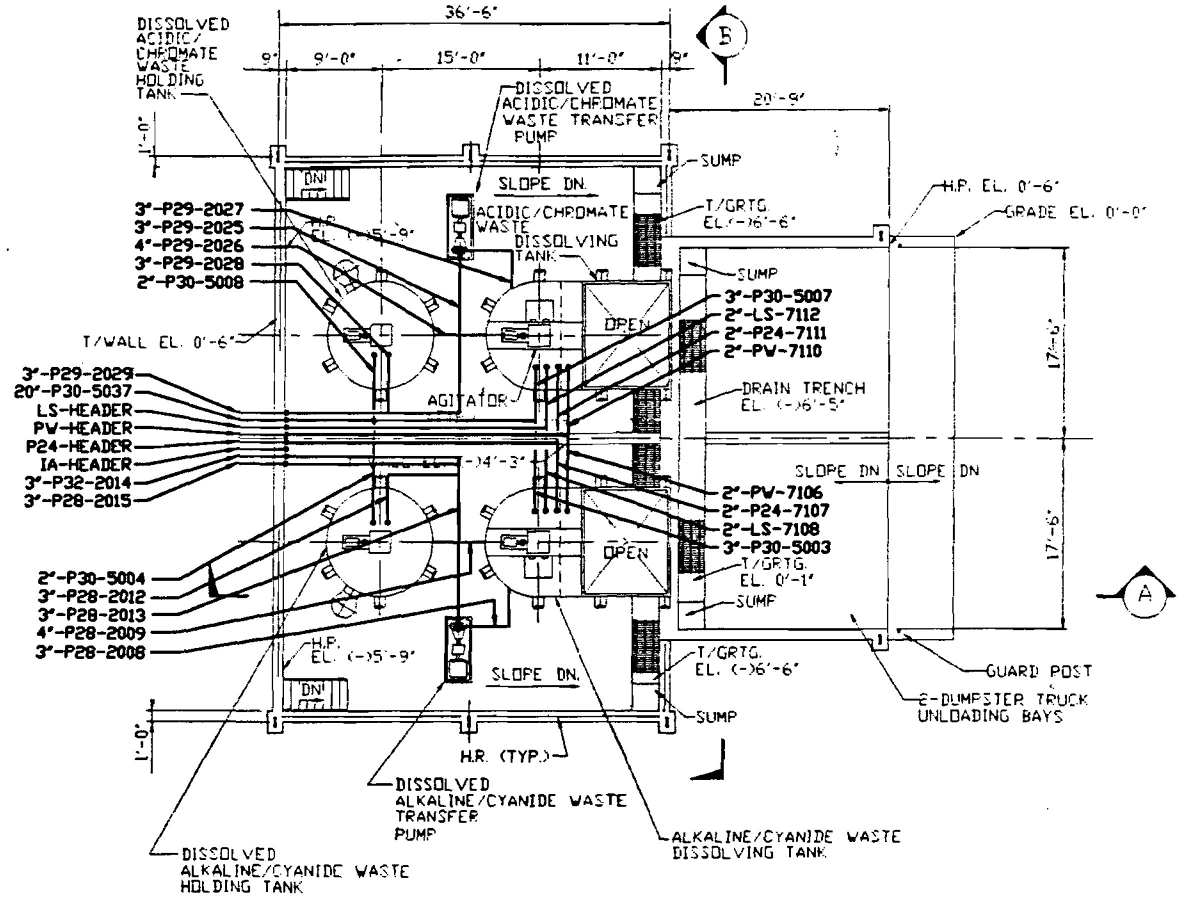
SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT PUMPABLE WASTE UNLOADING & STORAGE PLAN AND SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-013	A
CHKD	DATE		DATE		



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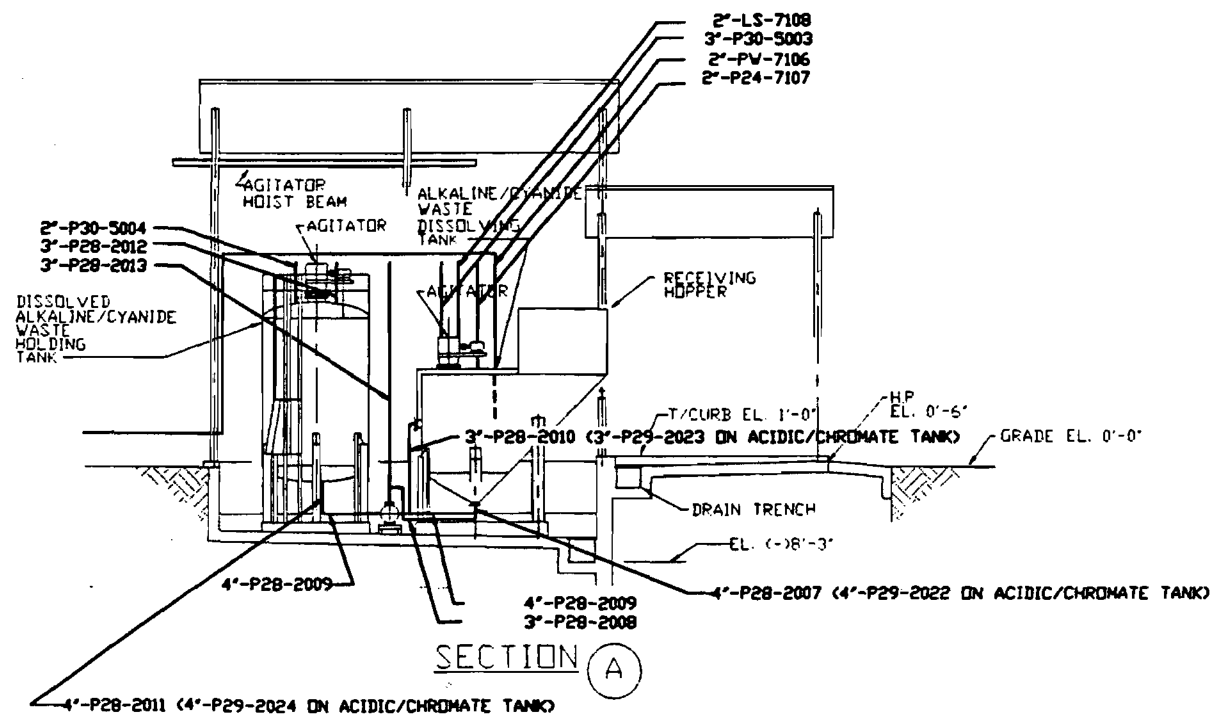

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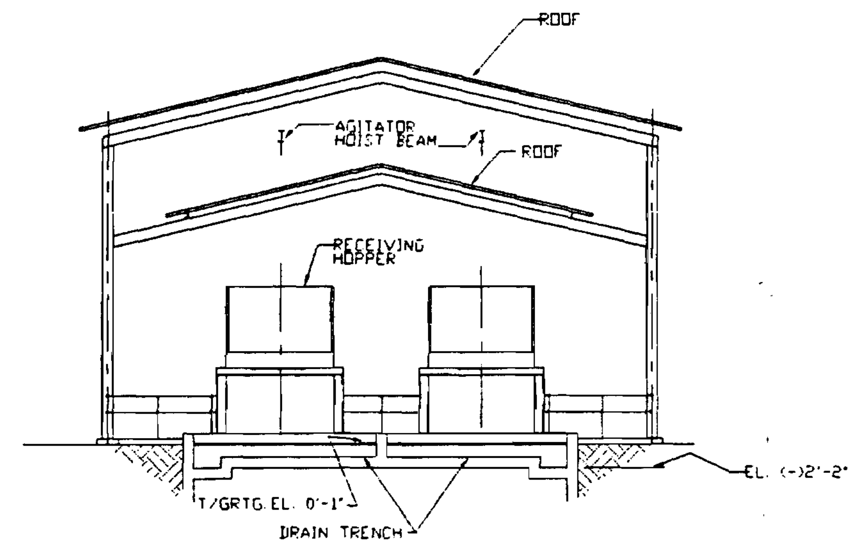

SECTION (B)

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20827 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/26/89

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BLF	

SCALE:

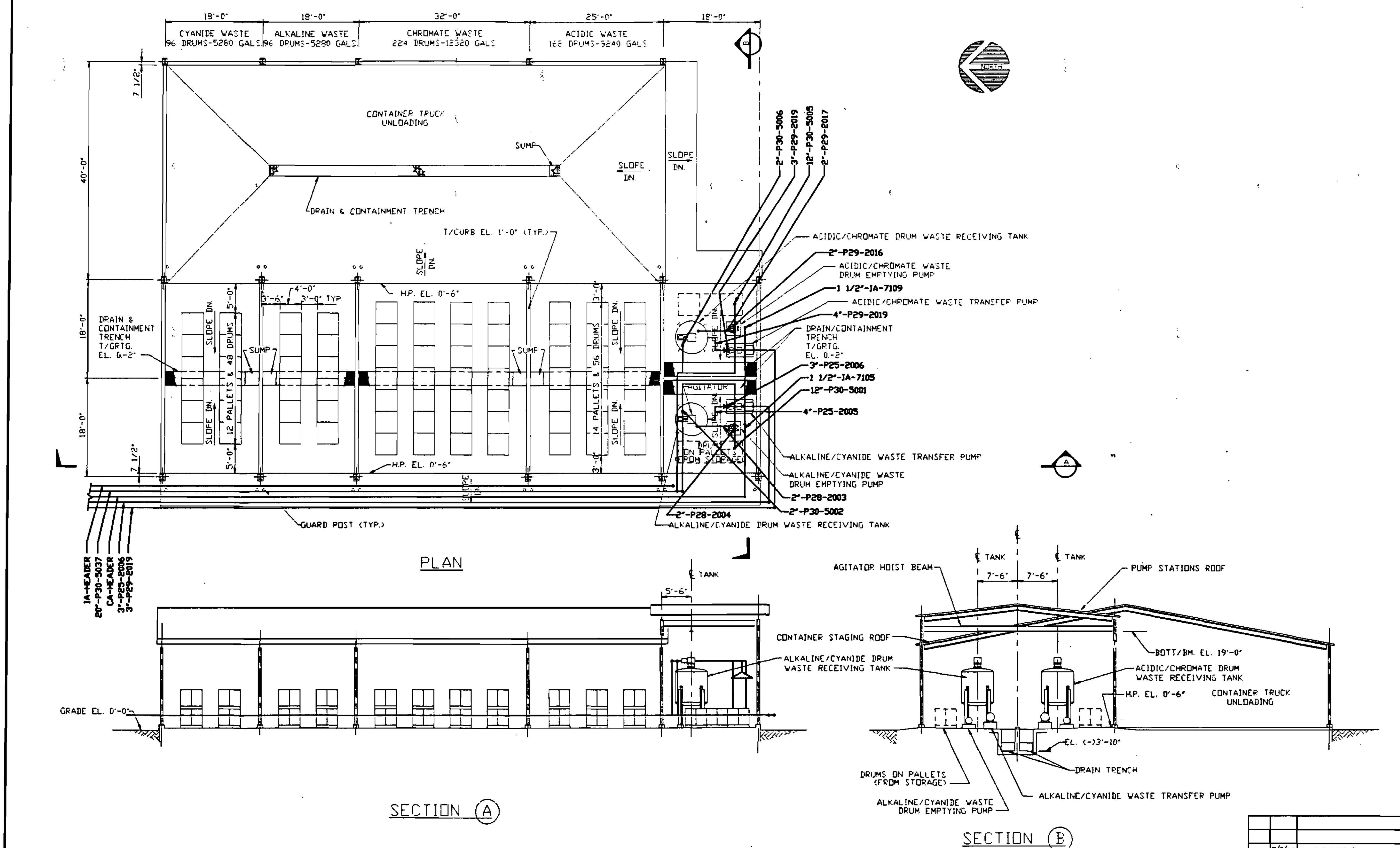
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT NON-PUMPABLE WASTE HANDLING PLAN AND SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-014	A
CHKD	DATE		DATE		

A-5



DICK M. MILLER — CERTIFICATE No. 20927 — STATE OF FLORIDA — REGISTERED ENGINEER

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[signature] 9/25/69

REV.	DATE	REVISION	BY	CHKD
A	7/8/87	ISSUED FOR PERMIT	BLF	AWS

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

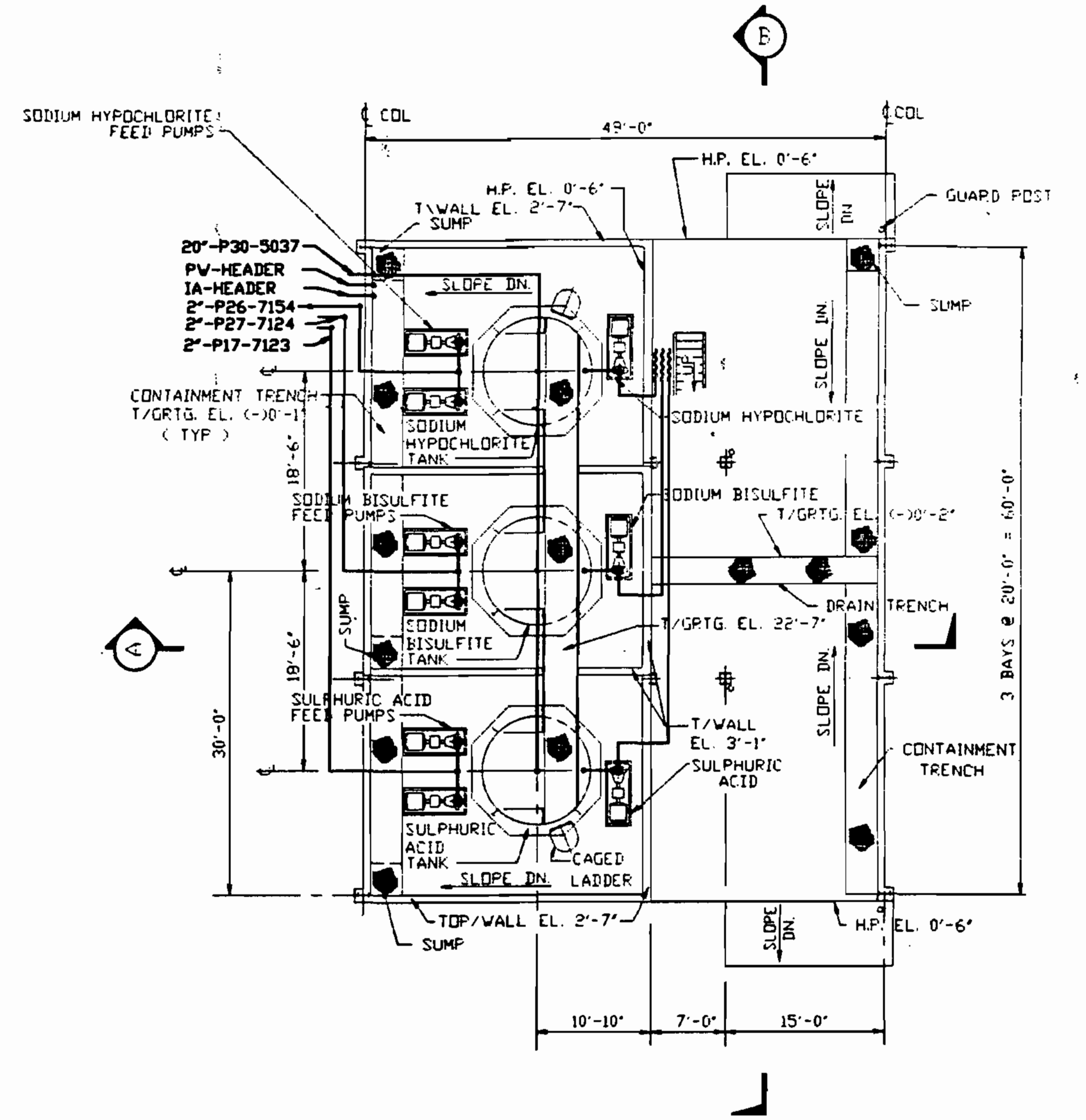
PROJECT
FLORIDA FIRST PROCESSING, INC.

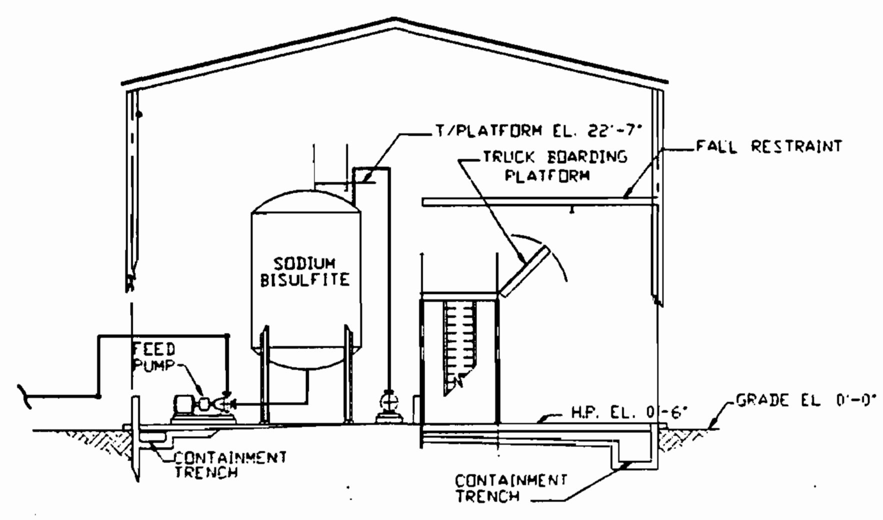
TITLE
GENERAL ARRANGEMENT–INORGANIC TREATMENT CONTAINER UNLOADING AND STAGING PLAN AND SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
BLF	8/08/89			8813-00-P-015	A
CHKD	DATE		DATE		

DATE PLOTTED: 9/8/89 FILE NAME: \8813\P015

A-4





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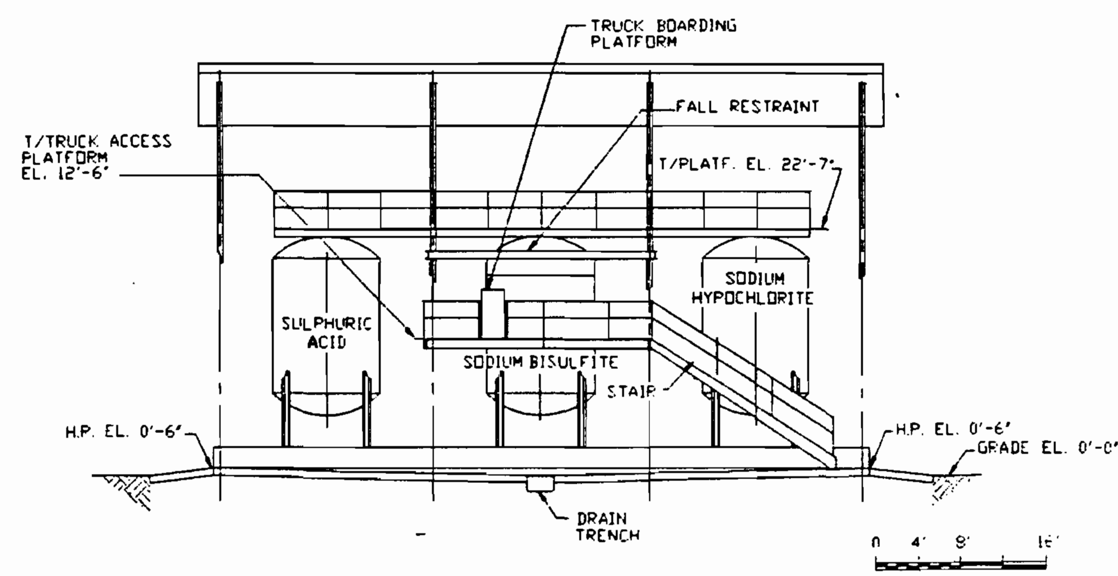

SECTION (B)

0 4' 8' 16'
SCALE

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

SCALE:

International WasteEnergy Systems
ST. LOUIS, MO.

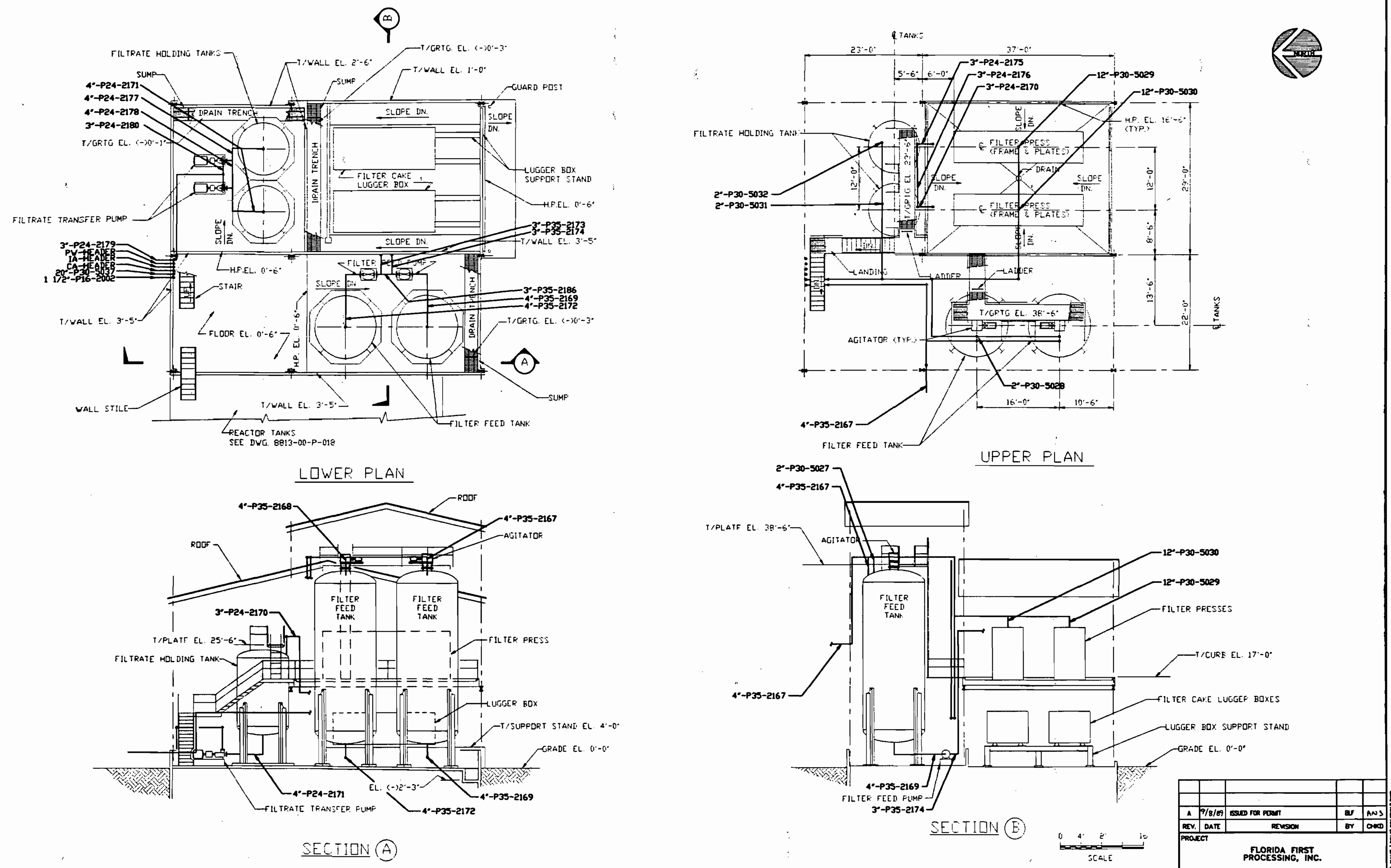
REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BF	AAS

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT REAGENT UNLOADING AND STORAGE PLAN AND SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
GHB	7/27/89			8813-00-P-016	A
CHKD	DATE		DATE		

FILE NAME: \8813\8813-00-P-016
DATE PLOTTED: 9/8/89



DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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SCALE:

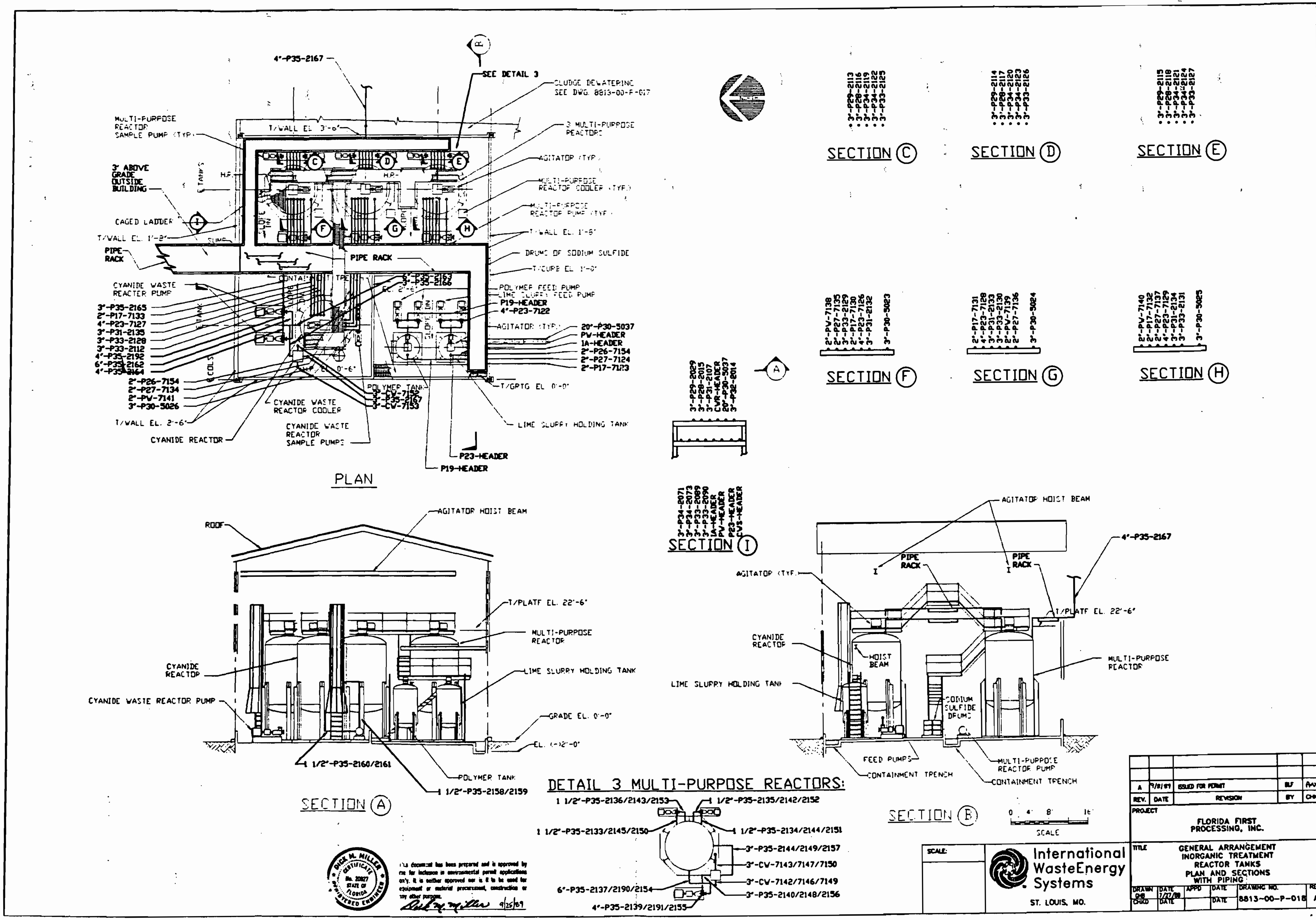
International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
A	9/8/89	ISSUED FOR PERMIT	BLF	ANS

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT SLUDGE DEWATERING PLANS & SECTIONS WITH PIPING

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
BLF	8/05/89			8813-00-P-017	A
CHKD	DATE		DATE		



PLAN
4"-P35-2167
SEE DETAIL 3
SLUDGE DEWATERING SEE DWG. 8813-00-P-017
MULTI-PURPOSE REACTOR SAMPLE PUMP (TYP.)
T/WALL EL. 3'-6"
3 MULTI-PURPOSE REACTORS
AGITATOR (TYP.)
MULTI-PURPOSE REACTOR COOLER (TYP.)
MULTI-PURPOSE REACTOR PUMP (TYP.)
T/WALL EL. 1'-6"
DRUMS OF SODIUM SULFIDE
T/CURB EL. 1'-0"
3' ABOVE GRADE OUTSIDE BUILDING
CAGED LADDER
T/WALL EL. 1'-2"
PIPE RACK
CYANIDE WASTE REACTOR PUMP
3"-P35-2165
2"-P17-7133
4"-P23-7127
3"-P31-2135
3"-P33-2128
3"-P33-2112
4"-P35-2192
6"-P35-2162
4"-P35-2164
2"-P26-7154
2"-P27-7134
2"-PV-7141
3"-P30-5026
T/WALL EL. 2'-6"
CYANIDE REACTOR
CYANIDE WASTE REACTOR COOLER
CYANIDE WASTE REACTOR SAMPLE PUMPS
POLYMER TANK
POLYMER FEED PUMP
LIME SLURRY FEED PUMP
P19-HEADER
4"-P23-7122
AGITATOR (TYP.)
20"-P30-5037
PW-HEADER
IA-HEADER
2"-P26-7154
2"-P27-7124
2"-P17-7123
T/GRTG EL. 0'-0"
LIME SLURRY HOLDING TANK
P23-HEADER
P19-HEADER
SECTION C
SECTION D
SECTION E
SECTION F
SECTION G
SECTION H
SECTION I
SECTION A
AGITATOR HOIST BEAM
ROOF
T/PLATF EL. 22'-6"
MULTI-PURPOSE REACTOR
CYANIDE REACTOR
LIME SLURRY HOLDING TANK
CYANIDE WASTE REACTOR PUMP
GRADE EL. 0'-0"
EL. (-)2'-0"
1 1/2"-P35-2160/2161
POLYMER TANK
1 1/2"-P35-2158/2159
DETAIL 3 MULTI-PURPOSE REACTORS
1 1/2"-P35-2136/2143/2153
1 1/2"-P35-2135/2142/2152
1 1/2"-P35-2133/2145/2150
1 1/2"-P35-2134/2144/2151
3"-P35-2144/2149/2157
3"-CV-7143/7147/7150
3"-CV-7142/7146/7149
3"-P35-2140/2148/2156
6"-P35-2137/2190/2154
4"-P35-2139/2191/2155
SECTION B
AGITATOR HOIST BEAM
4"-P35-2167
PIPE RACK
AGITATOR (TYP.)
T/PLATF EL. 22'-6"
CYANIDE REACTOR
HOIST BEAM
MULTI-PURPOSE REACTOR
LIME SLURRY HOLDING TANK
SODIUM SULFIDE DRUMS
FEED PUMPS
CONTAINMENT TRENCH
MULTI-PURPOSE REACTOR PUMP
CONTAINMENT TRENCH
SCALE
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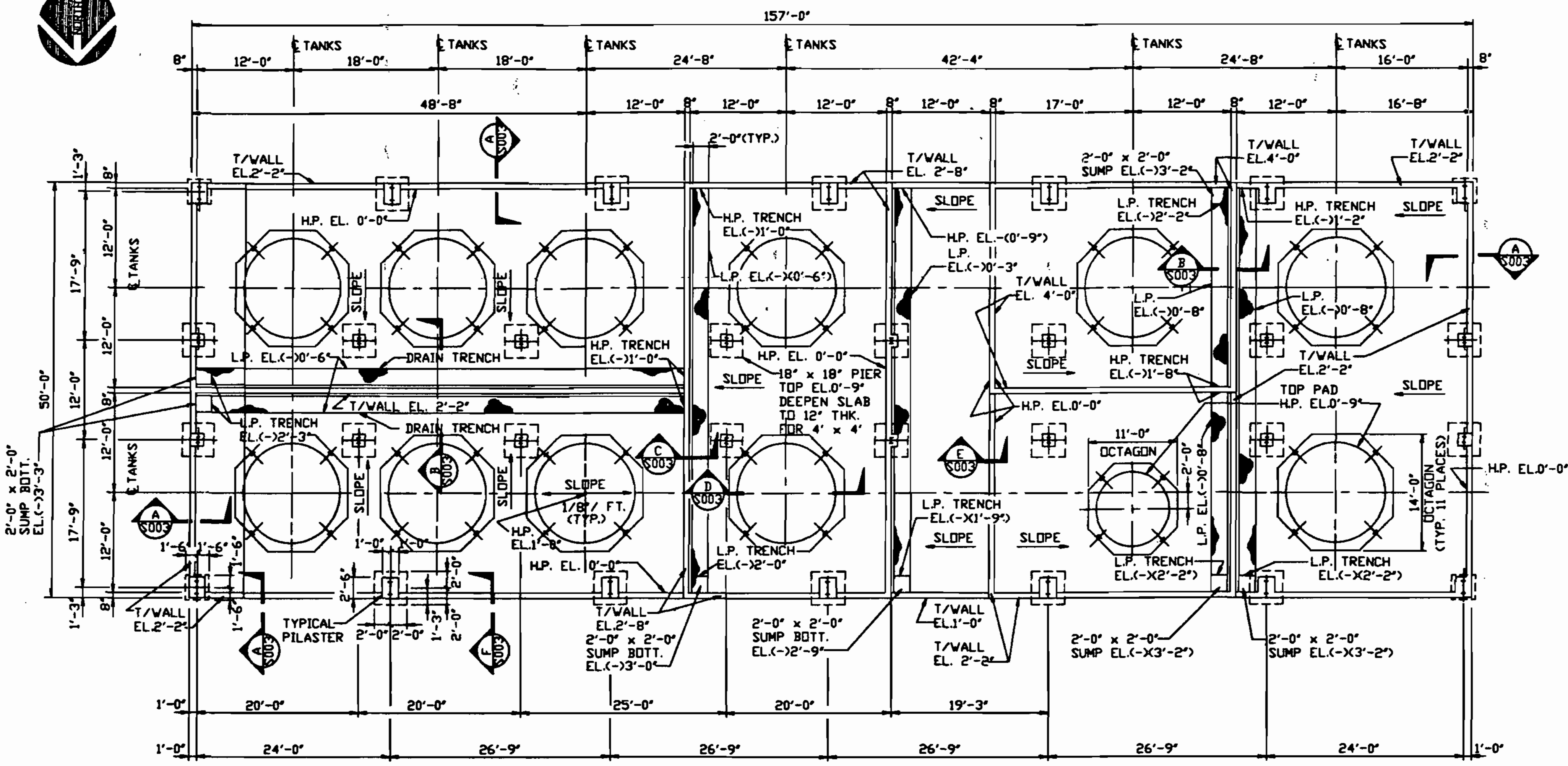
9/25/89
A | 9/8/89 | ISSUED FOR PERMIT | BJ | AWS
REV. | DATE | REVISION | BY | CHKD
PROJECT: FLORIDA FIRST PROCESSING, INC.
International WasteEnergy Systems
ST. LOUIS, MO.
TITLE: GENERAL ARRANGEMENT INORGANIC TREATMENT REACTOR TANKS PLAN AND SECTIONS WITH PIPING
DRAWING NO. 8813-00-P-018
REV. A

[redacted]



GENERAL CONCRETE AND FOUNDATION NOTES.

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL BUILDING CODES AND ORDINANCES AND ALL O.S.H.A. REQUIRMENTS AND REGULATIONS.
2. ALL FOUNDATION EXCAVATION SHALL BE CARRIED TO FIRM MATERIAL. SHOULD THIS NECESSITATE EXCAVATING DEEPER THAN BOTTOM OF FOUNDATION ELEVATIONS SHOWN ON THE DRAWINGS, THE OVER EXCAVATION SHALL BE BACKFILLED WITH LEAN CONCRETE OR AS SPECIFIED.
3. BACKFILL SHALL BE PLACED IN UNIFORM LAYERS ON ALL SIDES OF FOUNDATIONS AND PROPERLY COMPACTED.
4. FOUNDATIONS SHALL BEAR ON FIRM, NATURAL UNDISTURBED SOIL. PRESUMED ALLOWABLE BEARING PRESSURE = 3000 PSF.
5. FOUNDATION BEARING SURFACES SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.
6. ALL CONCRETE FLOORS SHALL HAVE A WOOD TROWEL UNPOLISHED NON-SLIP FINISH WITHOUT ADDITION OF ABRASIVE AGGREGATE.
7. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
8. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND SHALL NOTIFY ENGINEER IF ANY DISCREPANCIES ARE FOUND.
10. ALL CONCRETE SHALL COMPLY WITH THE LATEST ACI DETAILING MANUAL, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.
11. CONCRETE SHALL MEET THE FOLLOWING COMPRESSIVE STRENGTHS AT 28 DAYS: A. 3000 PSI -FOUNDATIONS B. 4000 PSI - ALL OTHER CONCRETE INCLUDING SLABS ON GRADE.
12. ALL REINFORCING SHALL CONFORM TO ASTM A615. GRADE 60, INCLUDING TIES.
13. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
14. ALL CONSTRUCTION JOINTS WITHIN CONTAINMENT BASINS SHALL BE KEYED AND SHALL HAVE A CONTINUOUS POLYETHYLENE WATER STOP EXTENDING NOT LESS THAN (3) INCHES INTO EACH JOINTED SECTION. THE SURFACE OF SAID JOINT SHALL BE SEALED WITH CARBOLINE 163-2 SEALER MATERIAL. THE PREPARATION OF THE CONCRETE SURFACE AND THE APPLICATION OF THE SEALER MATERIAL SHALL BE AS RECOMMENDED BY THE MANUFACTURER. IN SLAB WITH THICKNESS LESS THAN 6" AT THE CONSTRUCTION JOINT. THE BOTTOM OF THE THICKENED SECTIONS SHALL CONVERGE BACK TO THE NORMAL SLAB THICKNESS ON AN INVERTED SLOPE OF ONE (1) TO ONE (1) AND ALL REINFORCING SHALL EXTEND THROUGH THE JOINT.
15. ALL PREMOLDED EXPANSION JOINT FILLERS SHALL BE POLYETHLENE VINYLTEX (NON-BITUMINOUS) TYPE MANUFACTURED BY J&P PETROLEUM PRODUCTS, INC. OR EQUAL.
16. SLAB ON GRADE SHALL BE POURED MONOLITHICALLY EXCEPT AT EXPANSION AND CONSTRUCTION JOINTS SHOWN ON DRAWINGS.
17. ALL PUMPS SHALL HAVE FOOT-SUPPORTED BASE PLATES.
18. ALL AREAS OF FILL FOR FOUNDATIONS AND SLABS ON GRADE SHALL BE COMPACTED TO A FIELD DENSITY OF 95 PERCENT OF STANDARD PROCTOR LABORATORY DENSITY ASTM D 698.

REV.	DATE	REVISION	BY	CHKD
D	9/20/89	GENERAL REVISION	S.C.H.	[illegible]
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.J.A.	J.L.S.
A	1/12/89	ISSUED FOR INTERNAL REVIEW	M.J.A.	

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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9/25/89

SCALE: NTS

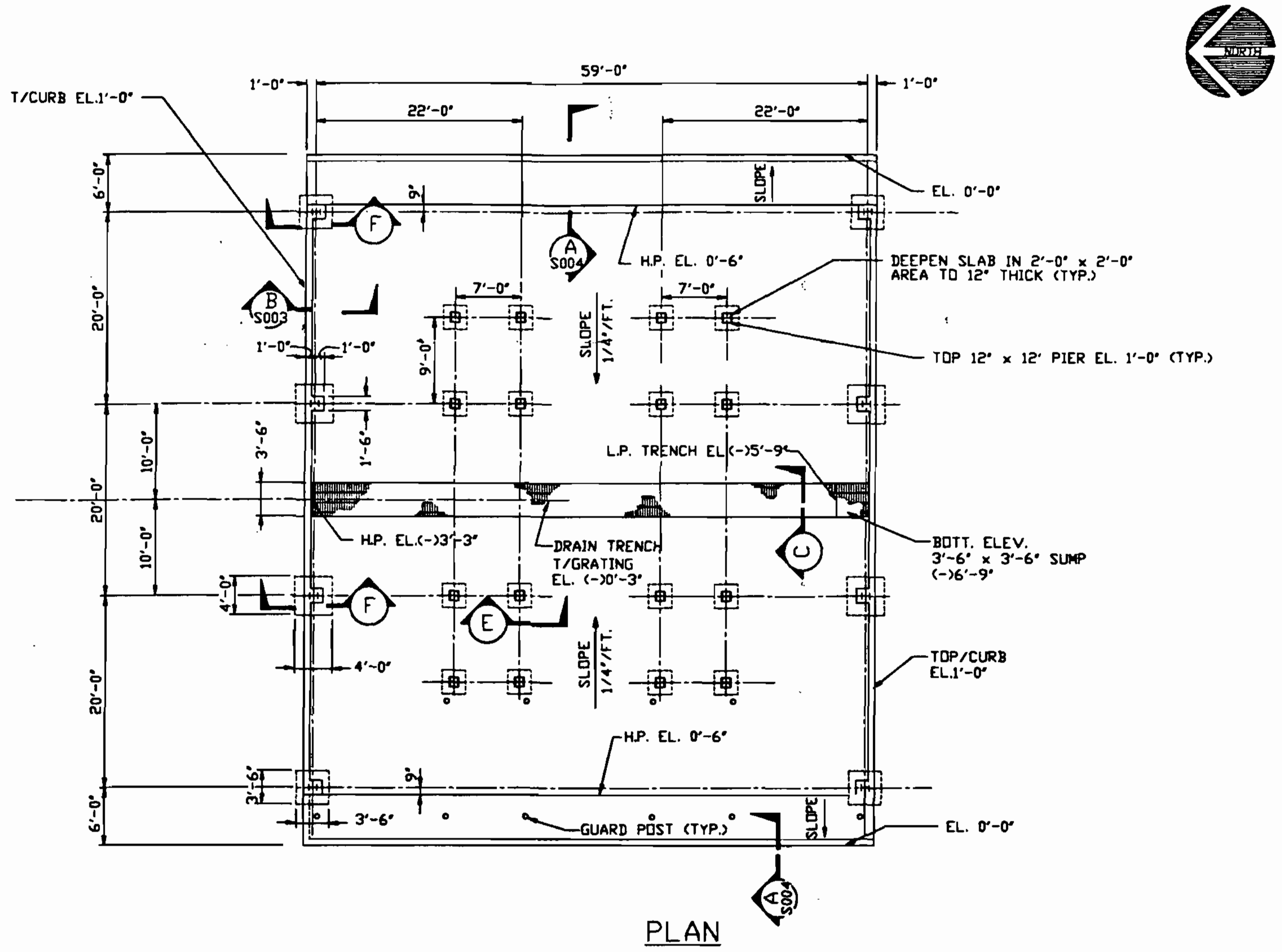
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT FOUNDATION PLAN PUMPABLE WASTE STORAGE

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.J.A.	1/09/89			8813-00-S-001	D
CHKD	DATE		DATE		

D-1



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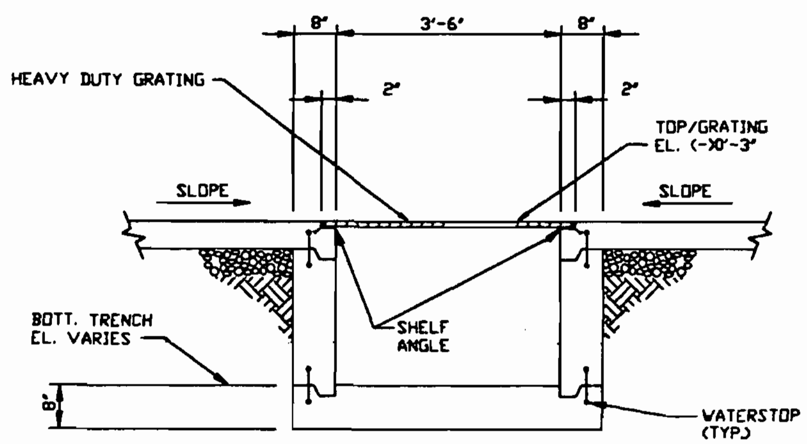
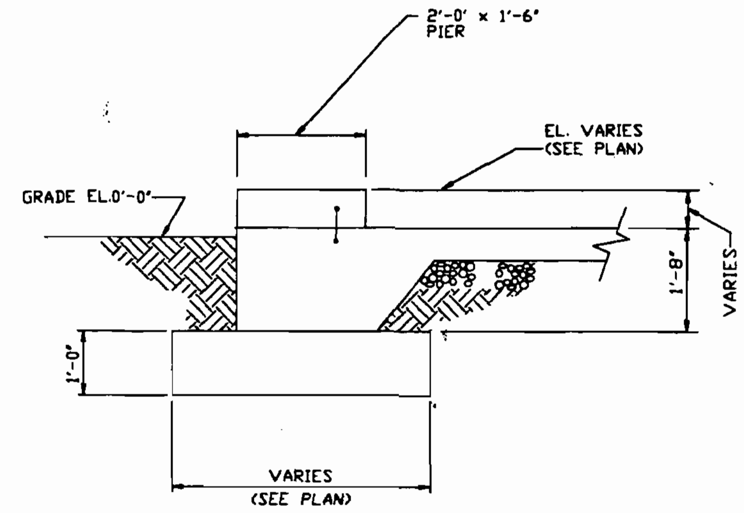


SECTION (C)



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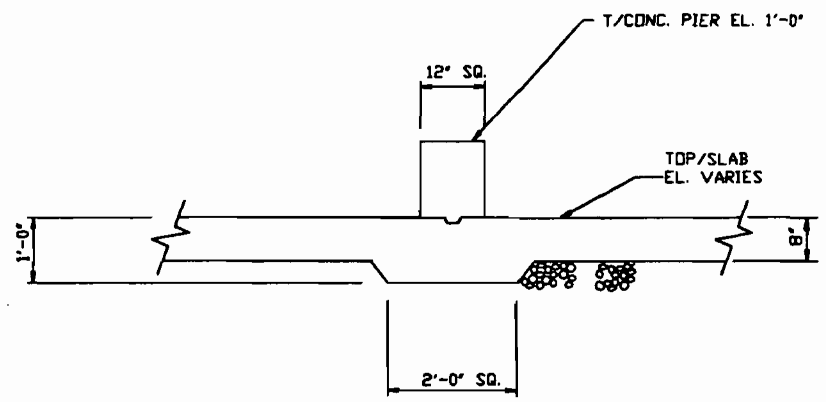

SECTION (E)

NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001

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DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

4/25/89

REV.	DATE	REVISION	BY	CHKD
C	4/25/89	ISSUED FOR PERMIT	T.E.R.	JLS
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.J.A.	JLS
A	1/6/89	ISSUED FOR INTERNAL REVIEW	M.K.	

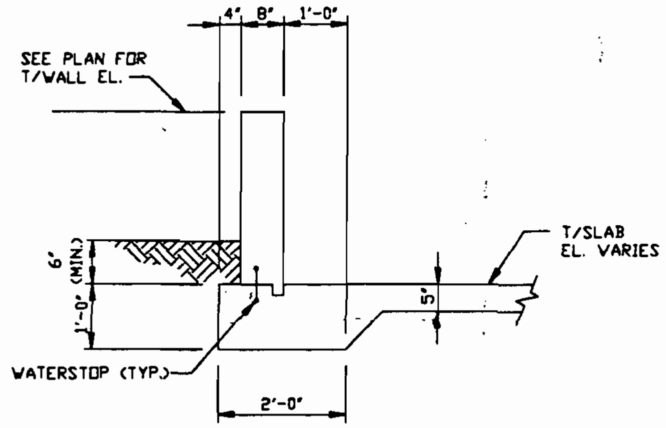
SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

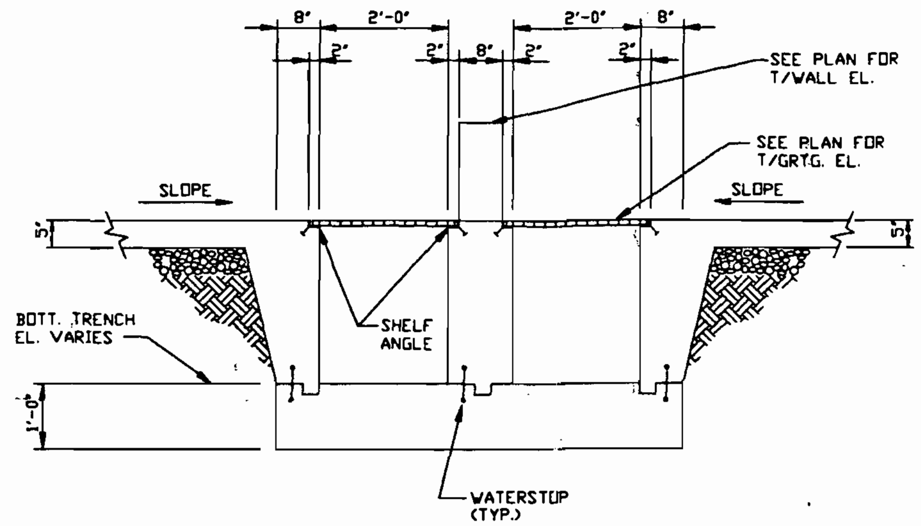
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT TANK TRUCK UNLOADING FOUNDATION PLAN & SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/5/89			8813-00-S-002	C
CHKD	DATE		DATE		



SECTION A S001



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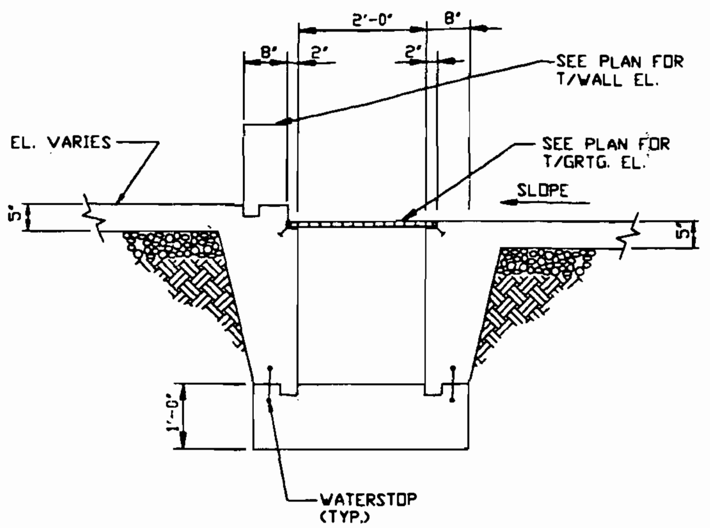
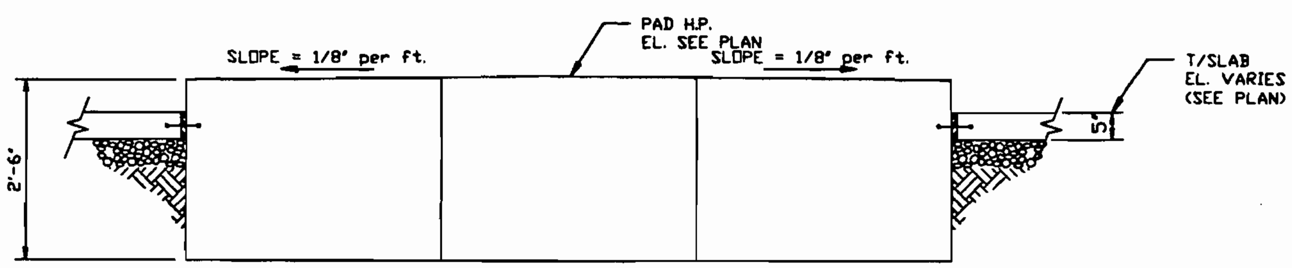
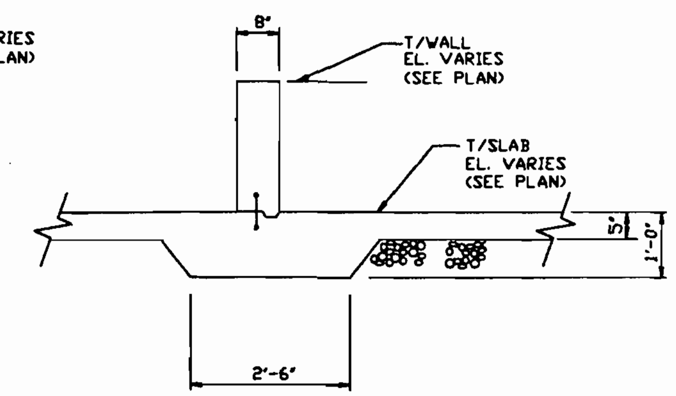


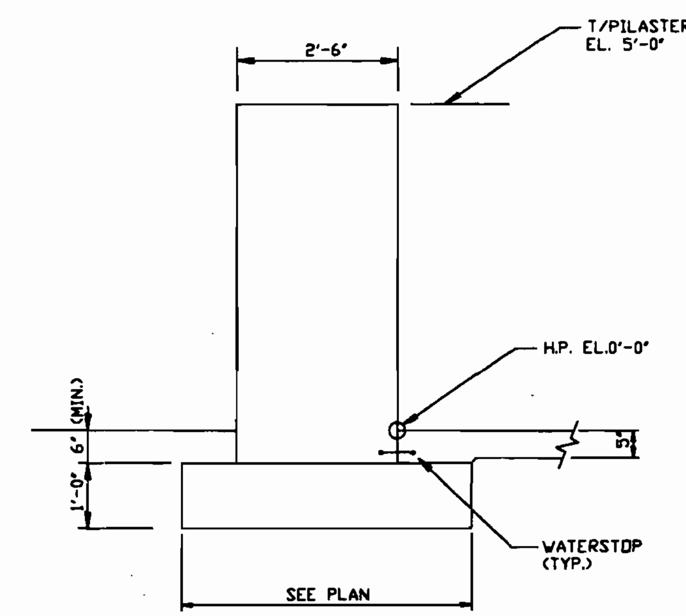
SECTION C S001



SECTION D S005, S-017



SECTION E S001



SECTION F S001

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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[signature] 9/26/89

SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
C	4/26/89	ISSUED FOR PERMIT	T.E.R.	JLS
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.J.A.	J.L.S.
A	01/10/89	ISSUED FOR INTERNAL REVIEW	M.K.	

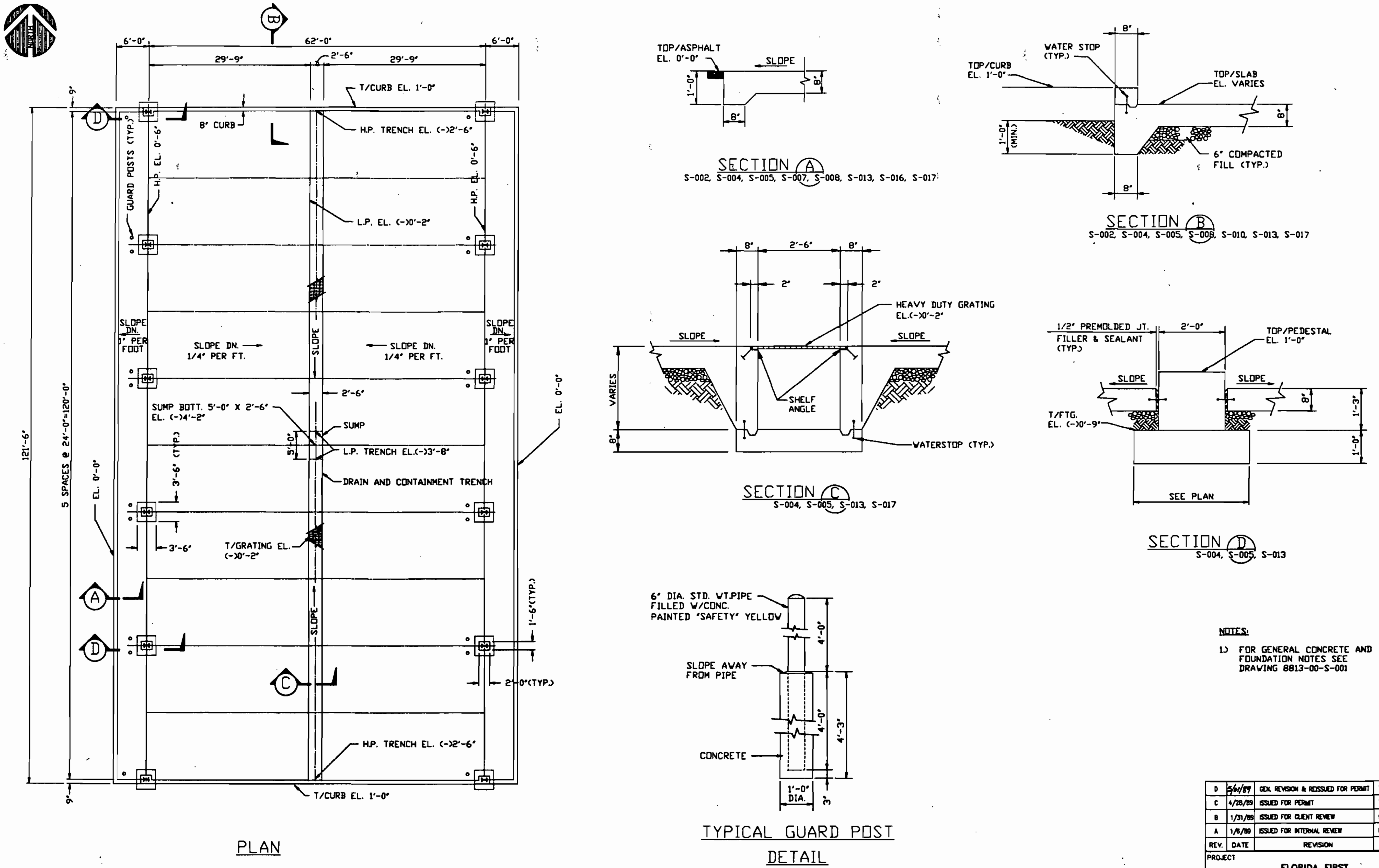
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT TANKS – FOUNDATION SECTIONS/DETAILS PUMPABLE WASTE STORAGE

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/5/89			8813-00-S-003	C
CHKD	DATE		DATE		

8813S003

04/18/89



NOTES:

1) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001

REV.	DATE	REVISION	BY	CHKD
D	5/11/89	GEN. REVISION & REISSUED FOR PERMIT	T.E.R.	DZS
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	1/31/89	ISSUED FOR CLIENT REVIEW	M.J.A.	
A	1/6/89	ISSUED FOR INTERNAL REVIEW	M.K.	

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9/25/89

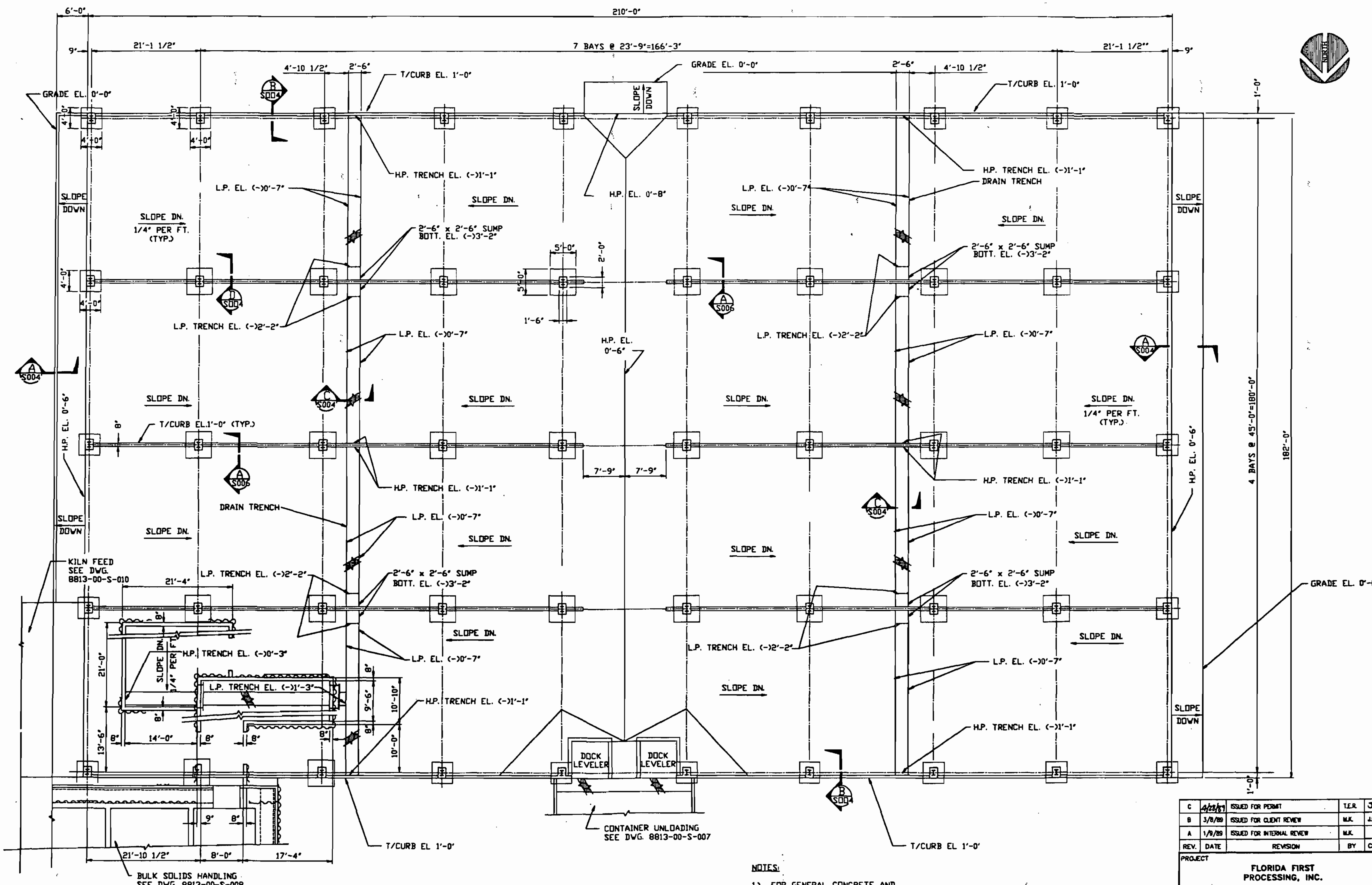
SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: TRUCK AND LUGGER BOX STAGING FOUNDATION PLAN & SECTIONS

DRAWN M.K. DATE 1/6/89 | APPD | DATE | DRAWING NO. 8813-00-S-004 | REV. D
CHKD | DATE | DATE



NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001

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Dick M. Miller 4/25/89

REV.	DATE	REVISION	BY	CHKD
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	JLS
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.K.	J.L.S.
A	1/9/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT CONTAINER STAGING FOUNDATION PLAN

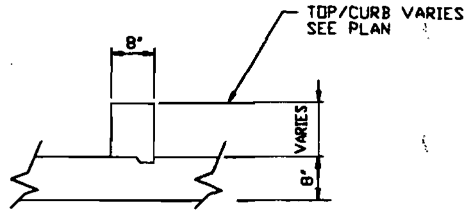
SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/9/89			8813-00-S-005	C
CHKD	DATE		DATE		

8813S005

04/18/89



SECTION A S005

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9/25/89

REV.	DATE	REVISION	BY	CHKD
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	JZS
B	1/31/89	ISSUED FOR CLIENT REVIEW	M.K.	
A	1/9/89	ISSUED FOR INTERNAL REVIEW	M.K.	

8813S006

PROJECT: FLORIDA FIRST PROCESSING, INC.

SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

TITLE: ORGANIC TREATMENT
MISC. FOUNDATION SECTIONS & DETAILS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
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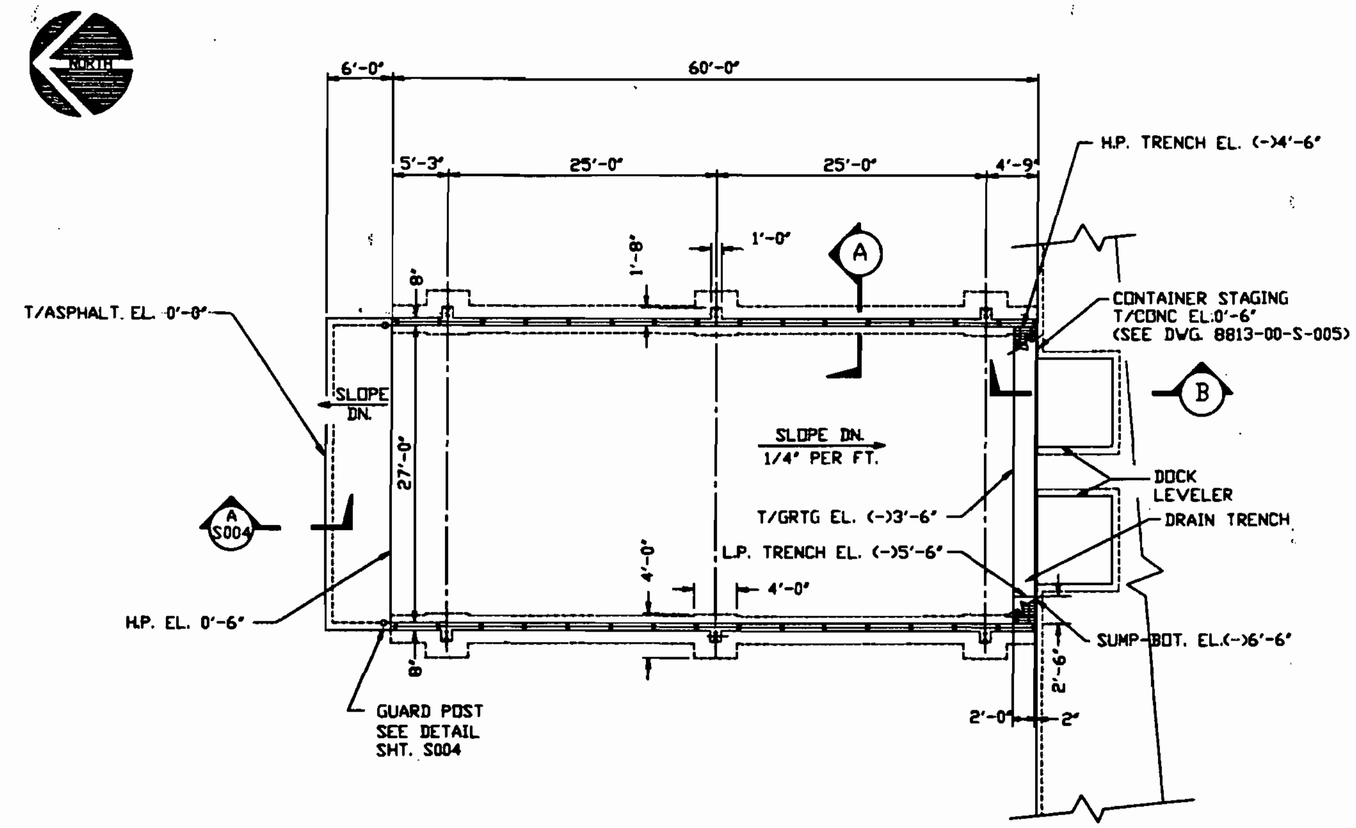
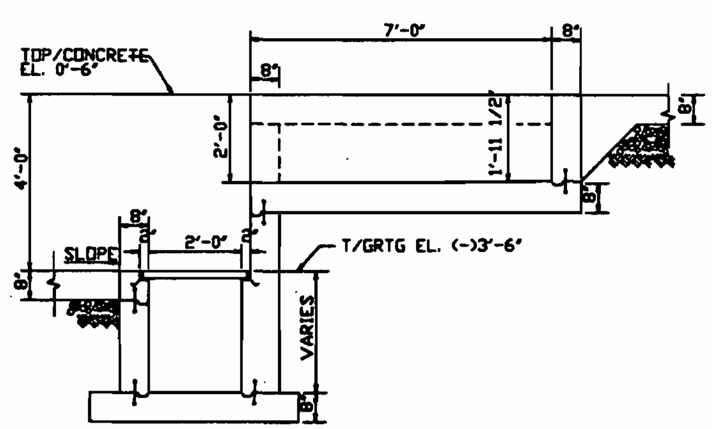
CHKD	DATE		DATE	8813-00-S-006	C

04/18/89



PLAN



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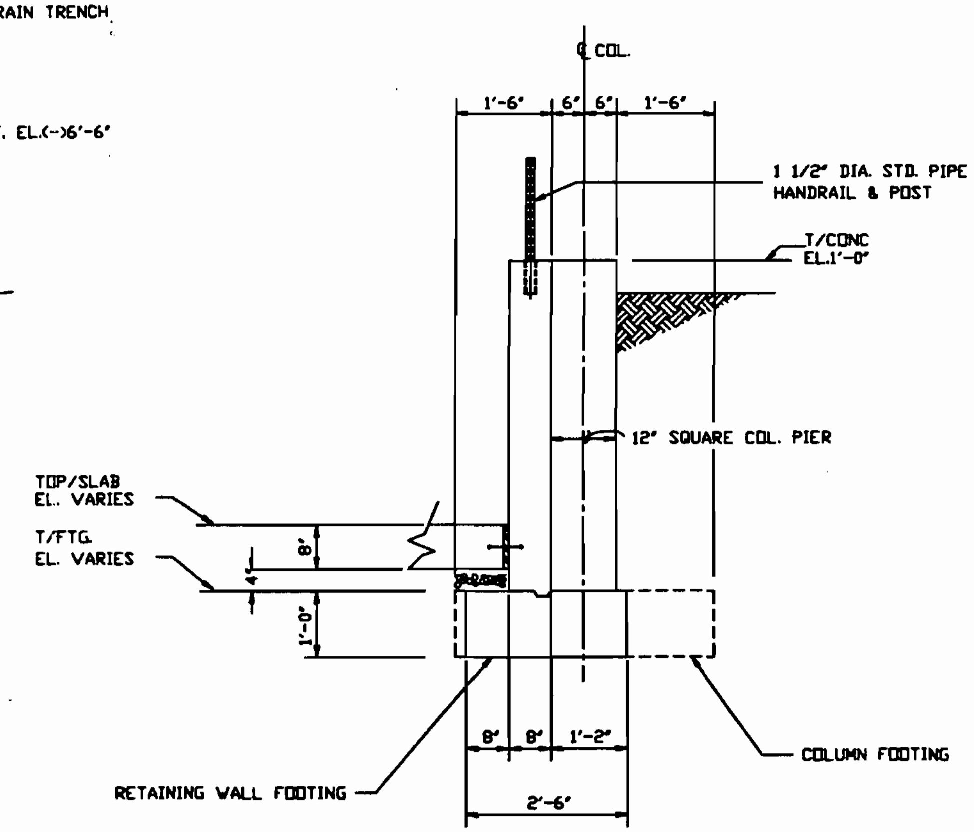

SECTION (C)

NOTES:

1) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001

REV.	DATE	REVISION	BY	CHKD
D	9/20/89	GENERAL REVISION	S.C.H.	R.S.H.
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	3/8/89	ISSUED FOR CLIENT REVIEW	R.K.	J.L.S.
A	1/6/89	ISSUED FOR INTERNAL REVIEW	R.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT CONTAINER TRUCK UNLOADING FOUNDATION PLAN & SECTIONS

SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN R.K. DATE 1/5/89 | APPD | DATE | DRAWING NO. 8813-00-S-007 | REV. D
CHKD | DATE | | DATE |

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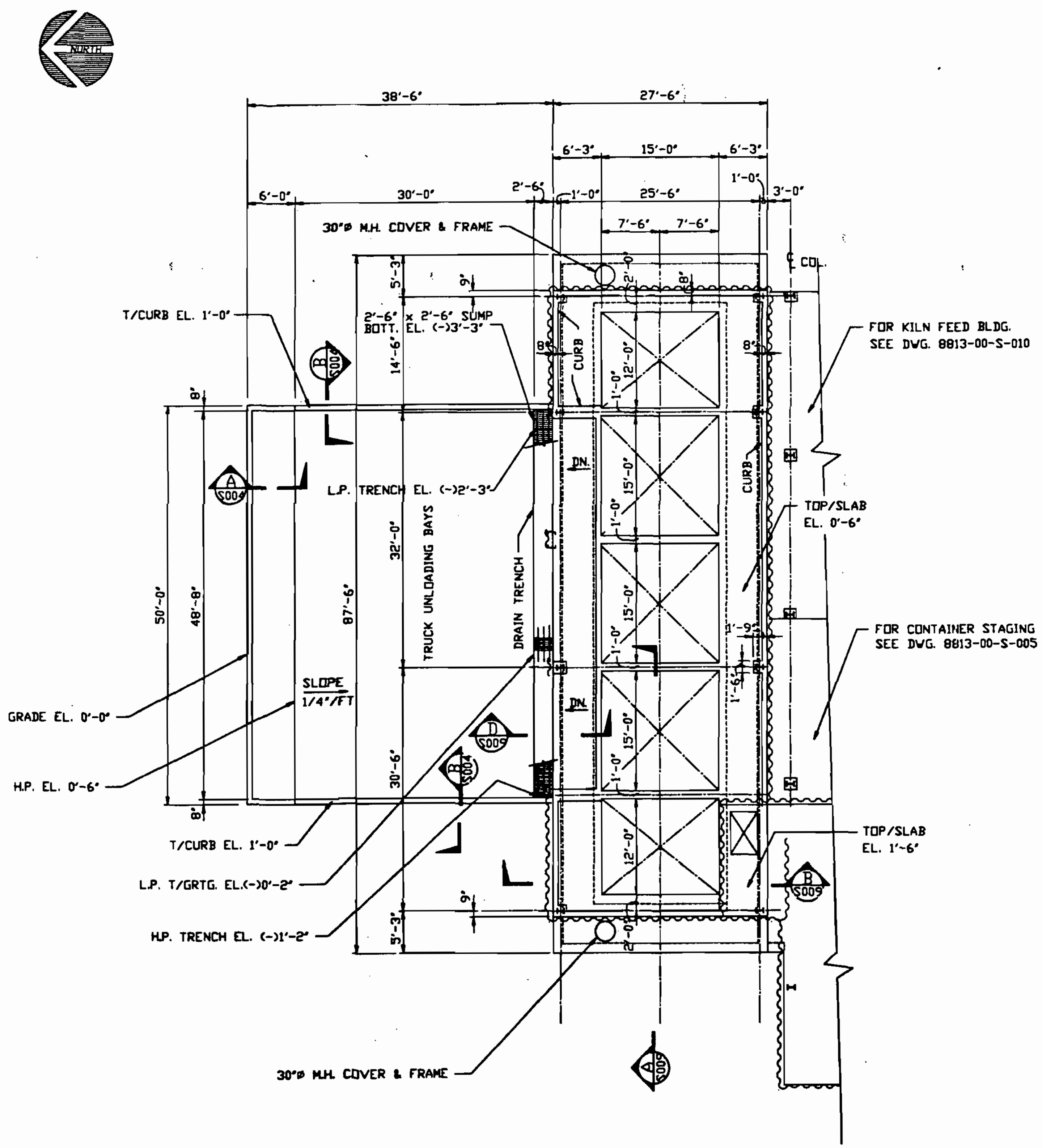
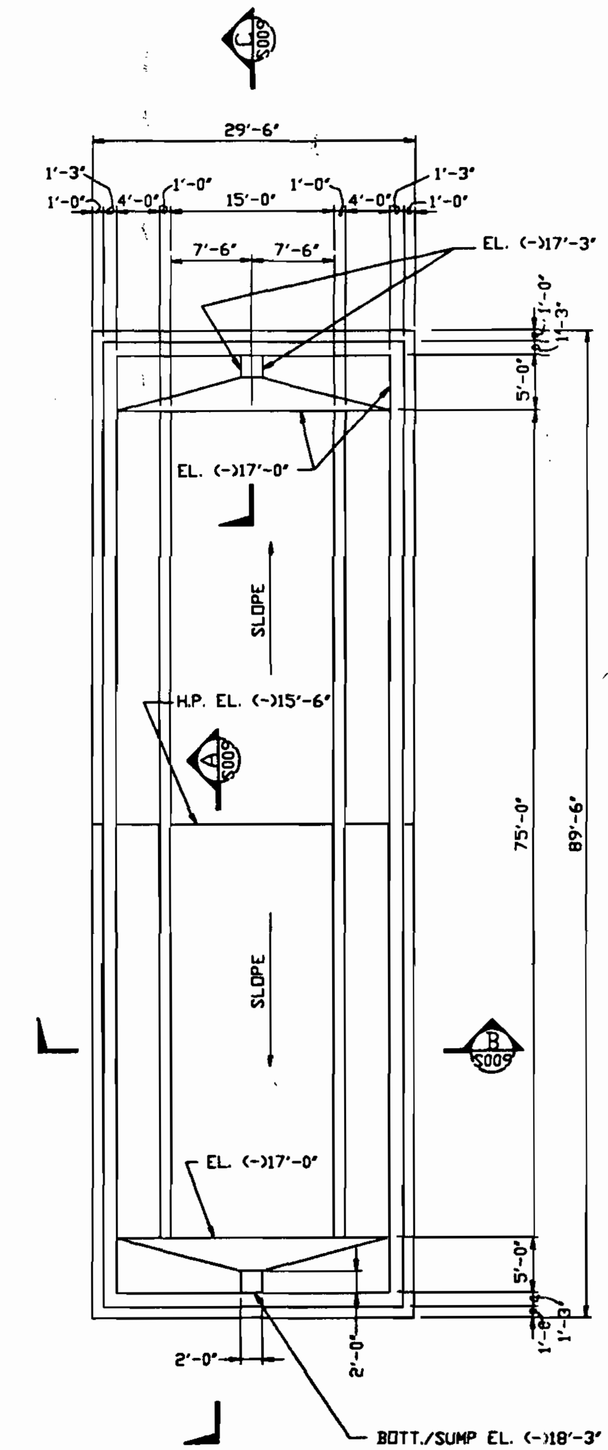
Dick M. Miller 9/25/89



PLAN @ EL. 1'-6"



FOUNDATION PLAN

NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001.

REV.	DATE	REVISION	BY	CHKD
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.E.R.	J.R.S.
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.K.	J.L.S.
A	1/12/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC TREATMENT
BULK SOLIDS UNLOADING & HANDLING
FOUNDATION PLANS

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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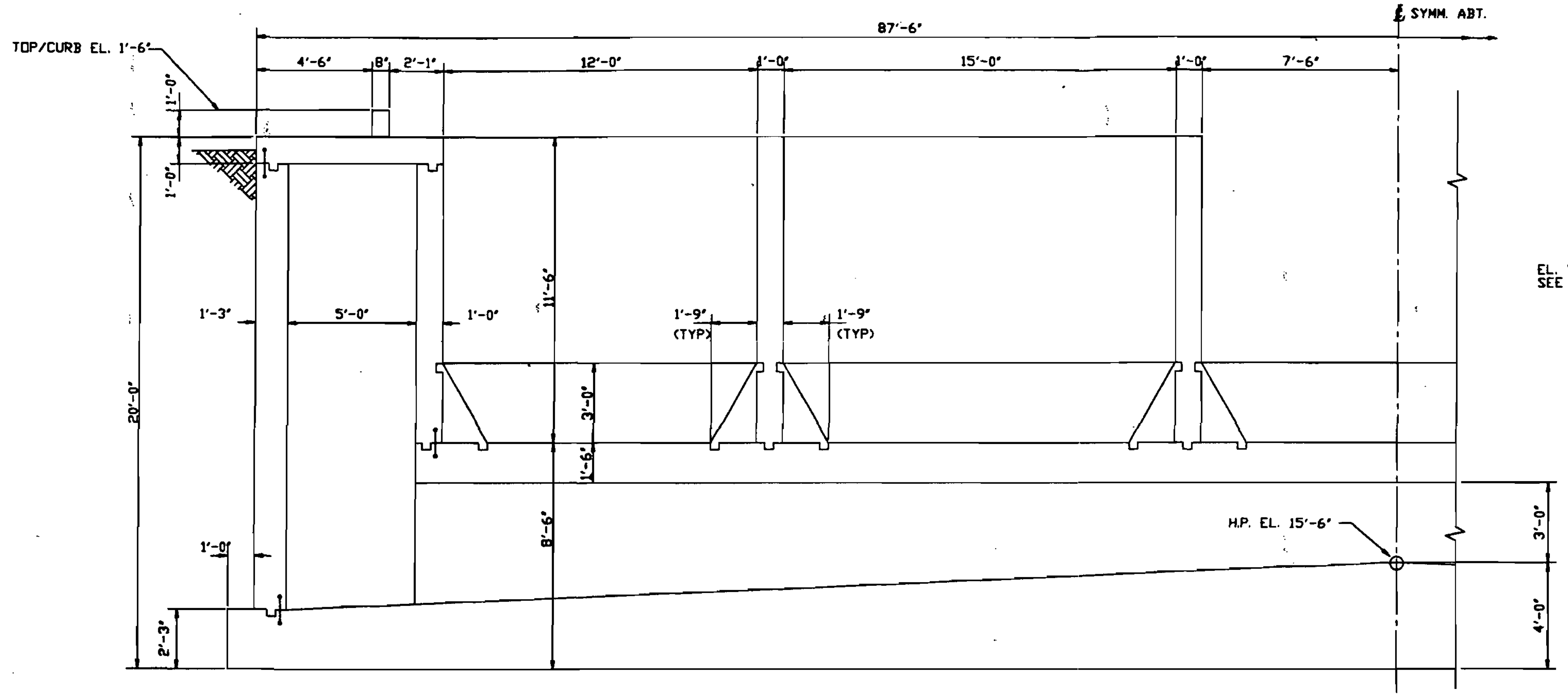
[signature] 9/25/89

SCALE: NTS

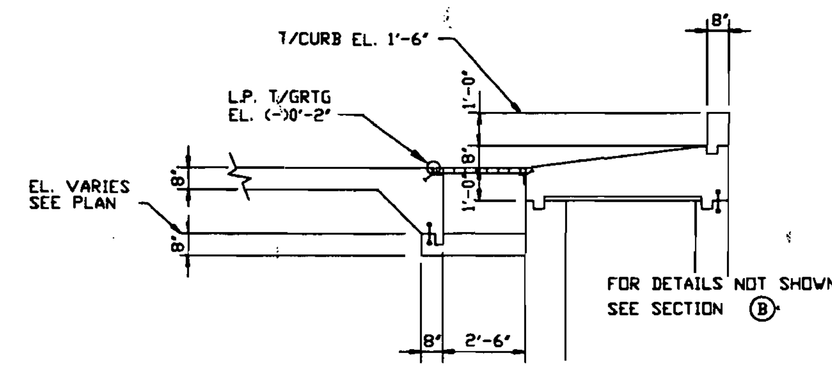
International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/9/89			8813-00-S-008	D
CHKD	DATE		DATE		

8813S008
05/01/89



SECTION A S008



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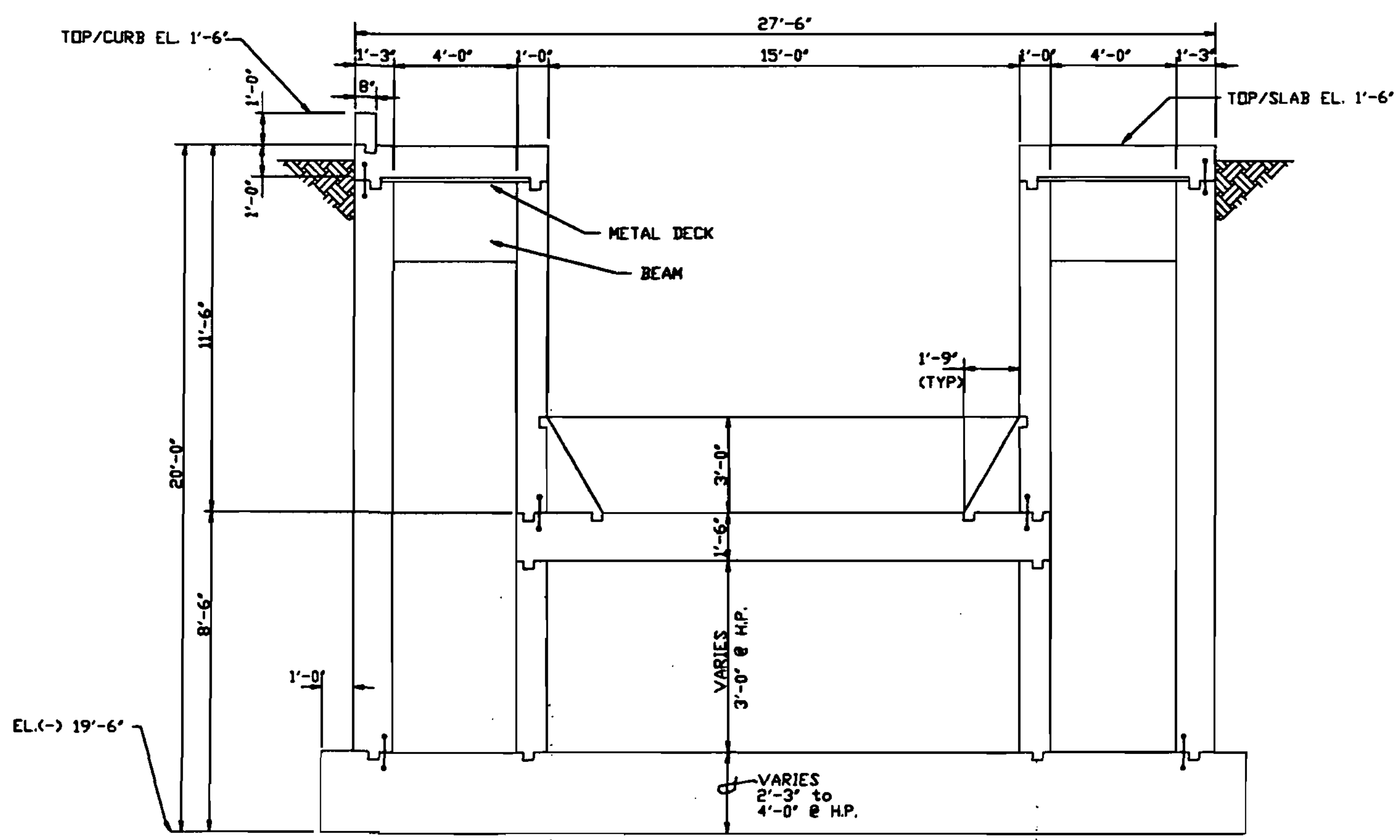

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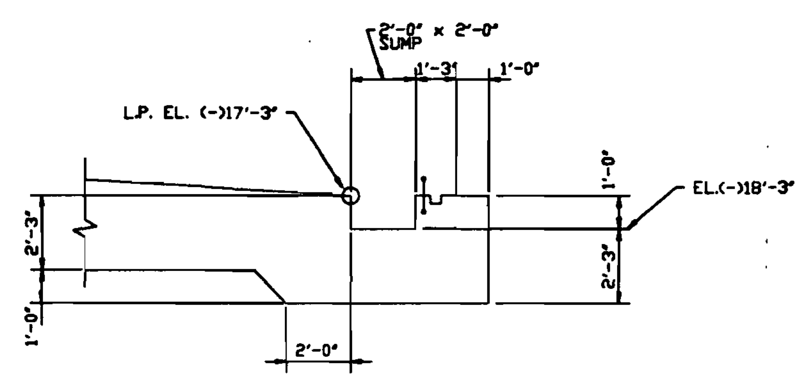

SECTION C S008

REV.	DATE	REVISION	BY	CHKD
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.E.R.	JLS
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	2/6/89	ISSUED FOR CLIENT REVIEW	M.K.	
A	01/11/89	ISSUED FOR INTERNAL REVIEW	M.K.	

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9/25/89

SCALE: NTS

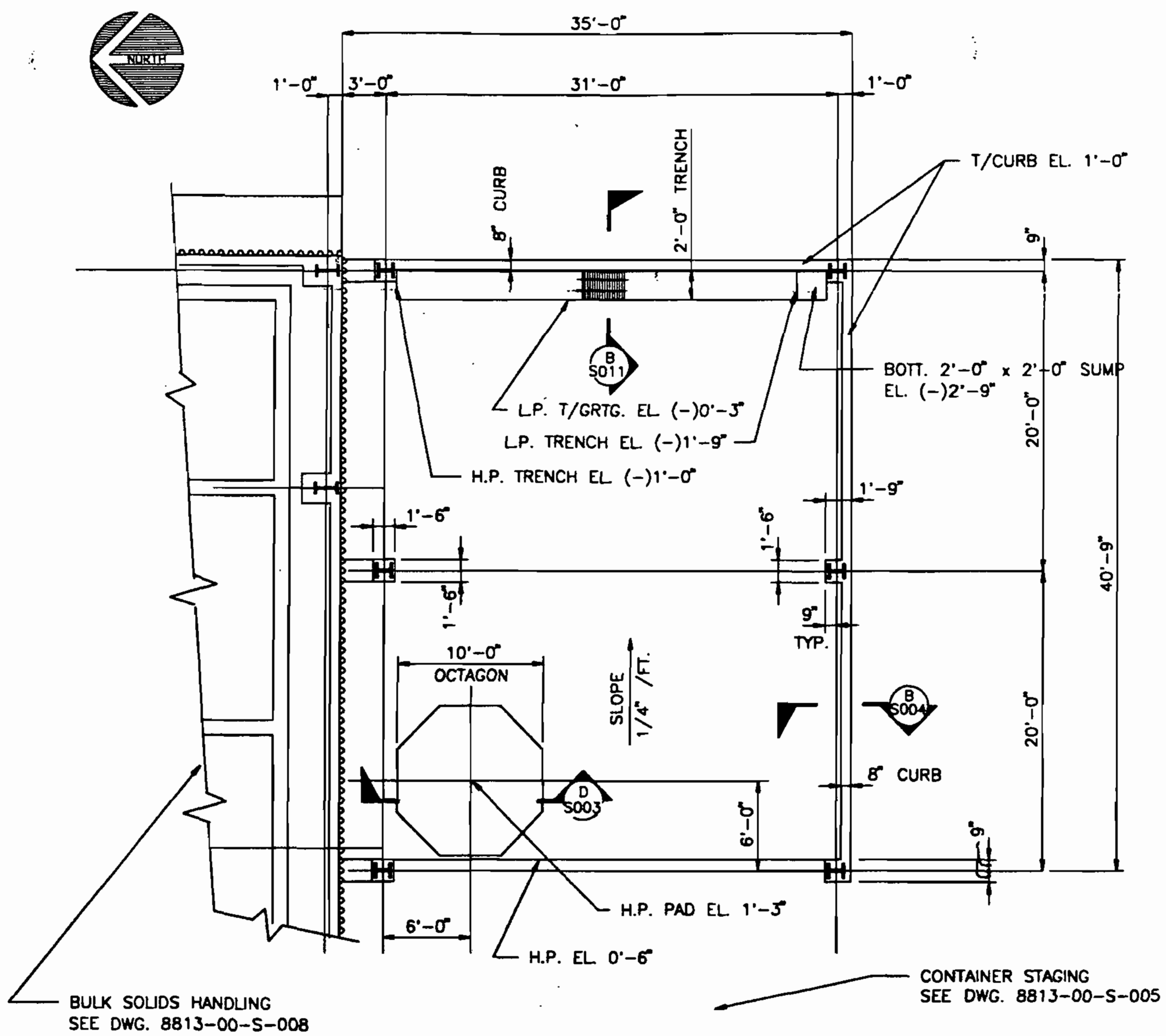
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
ORGANIC TREATMENT
BULK SOLIDS UNLOADING & HANDLING
FOUNDATION SECTIONS AND DETAILS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/3/89			8813-00-S-009	D
CHKD	DATE		DATE		

8813S009
05/01/89



PLAN

NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING NO. 8813-00-S-001.

REV.	DATE	REVISION	BY	CHKD
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.E.R.	JZS
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.K.	J.L.S
A	1/12/89	ISSUED FOR INTERNAL REVIEW	M.K.	

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Dick M. Miller 9/25/89

SCALE: NTS

International WasteEnergy Systems

ST. LOUIS, MO.

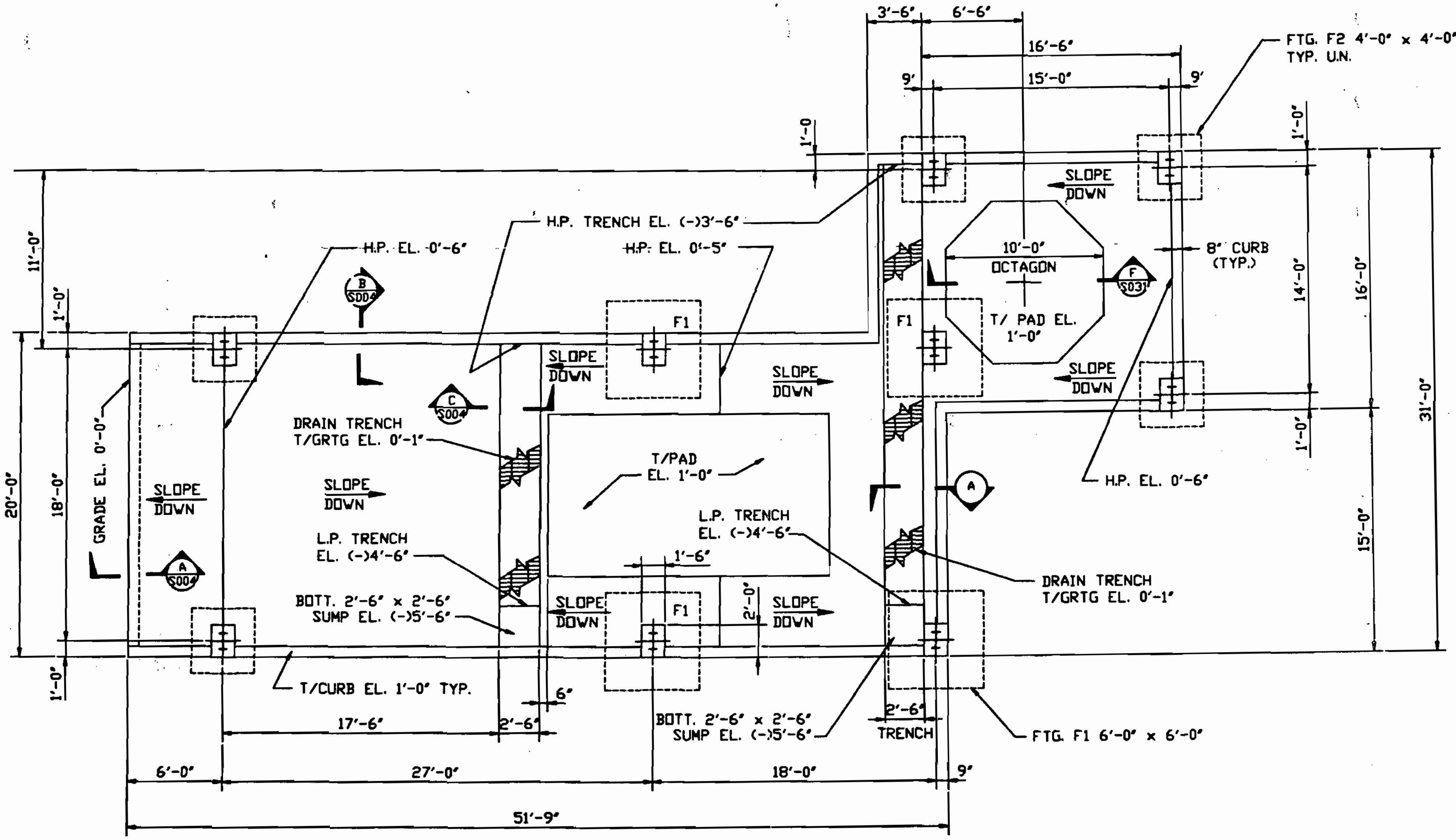
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT KILN FEED FOUNDATION PLAN

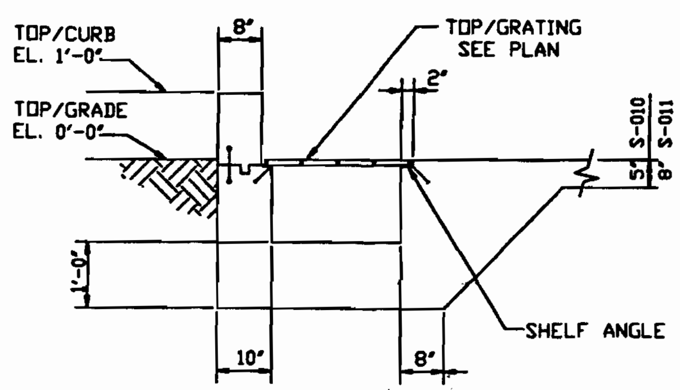
DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/10/89			8813-00-S-010	D
CHKD	DATE		DATE		

8813S010

05/01/89



DRIED SOLIDS SYSTEM PLAN



SECTION A
S010, S011

NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING NO. 8813-00-S-001.

2.) FOR LOCATION - SEE SITE PLAN DRAWING 8813-00-M-001

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

REV.	DATE	REVISION	BY	CHKD
E	9/20/89	GENERAL REVISION	S.C.H.	RSM
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.R.	
C	4/28/89	ISSUED FOR PERMIT	M.K.	J.S
B	2/3/89	ISSUED FOR CLIENT REVIEW	M.K.	
A	1/24/89	ISSUED FOR INTERNAL REVIEW	M.K.	

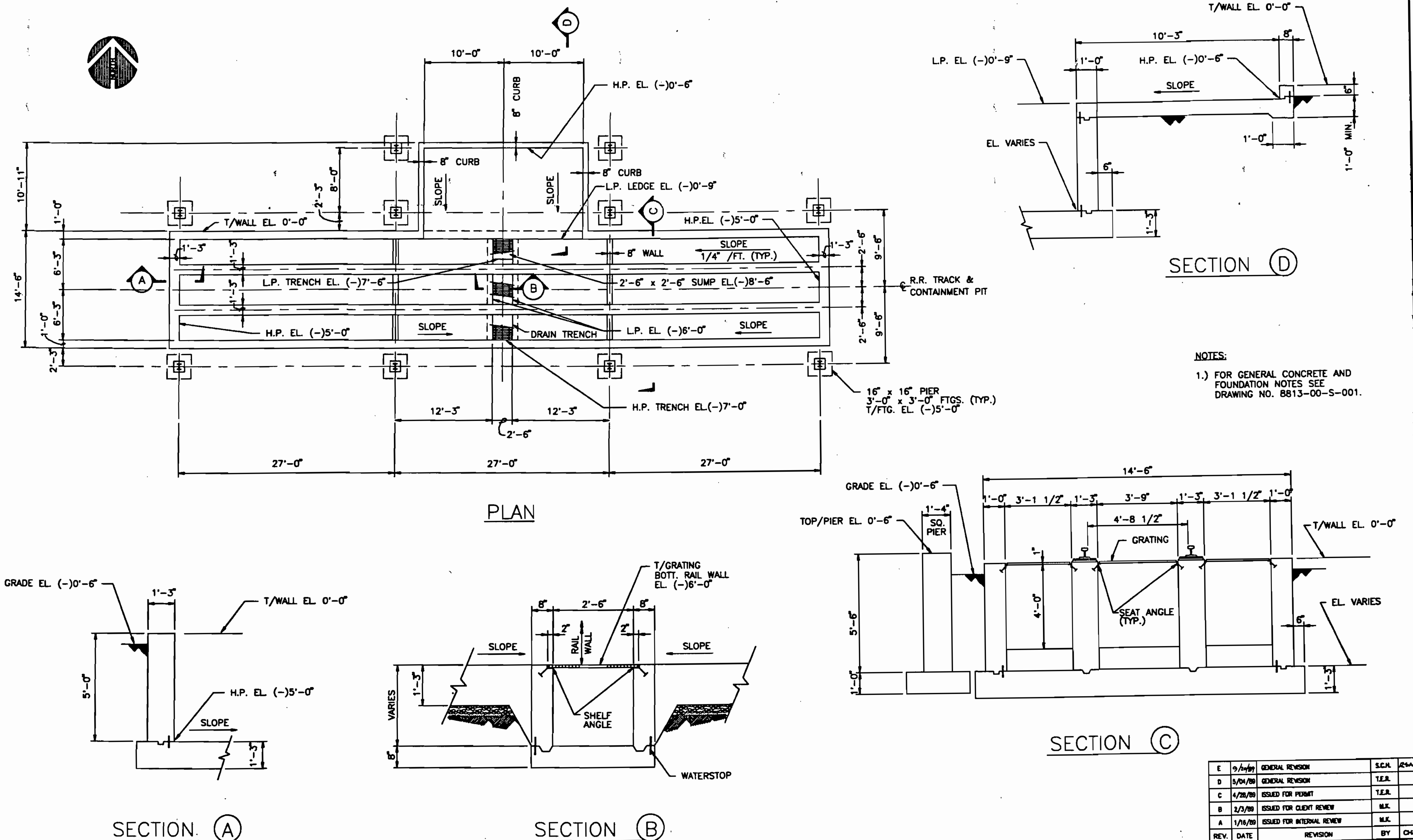
PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: ORGANIC TREATMENT DRIED SOLIDS SYSTEM FOUNDATION PLAN & SECTION

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/10/89			8813-00-S-011	E
CHKD	DATE		DATE		

FILE NAME: 8813S011.DWG

E-1



NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING NO. 8813-00-S-001.

REV.	DATE	REVISION	BY	CHKD
E	9/20/89	GENERAL REVISION	S.C.H.	
D	5/04/89	GENERAL REVISION	T.E.R.	
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	
B	2/3/89	ISSUED FOR CLIENT REVIEW	M.K.	
A	1/16/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: RAILROAD TANK CAR UNLOADING FOUNDATION PLAN & SECTIONS

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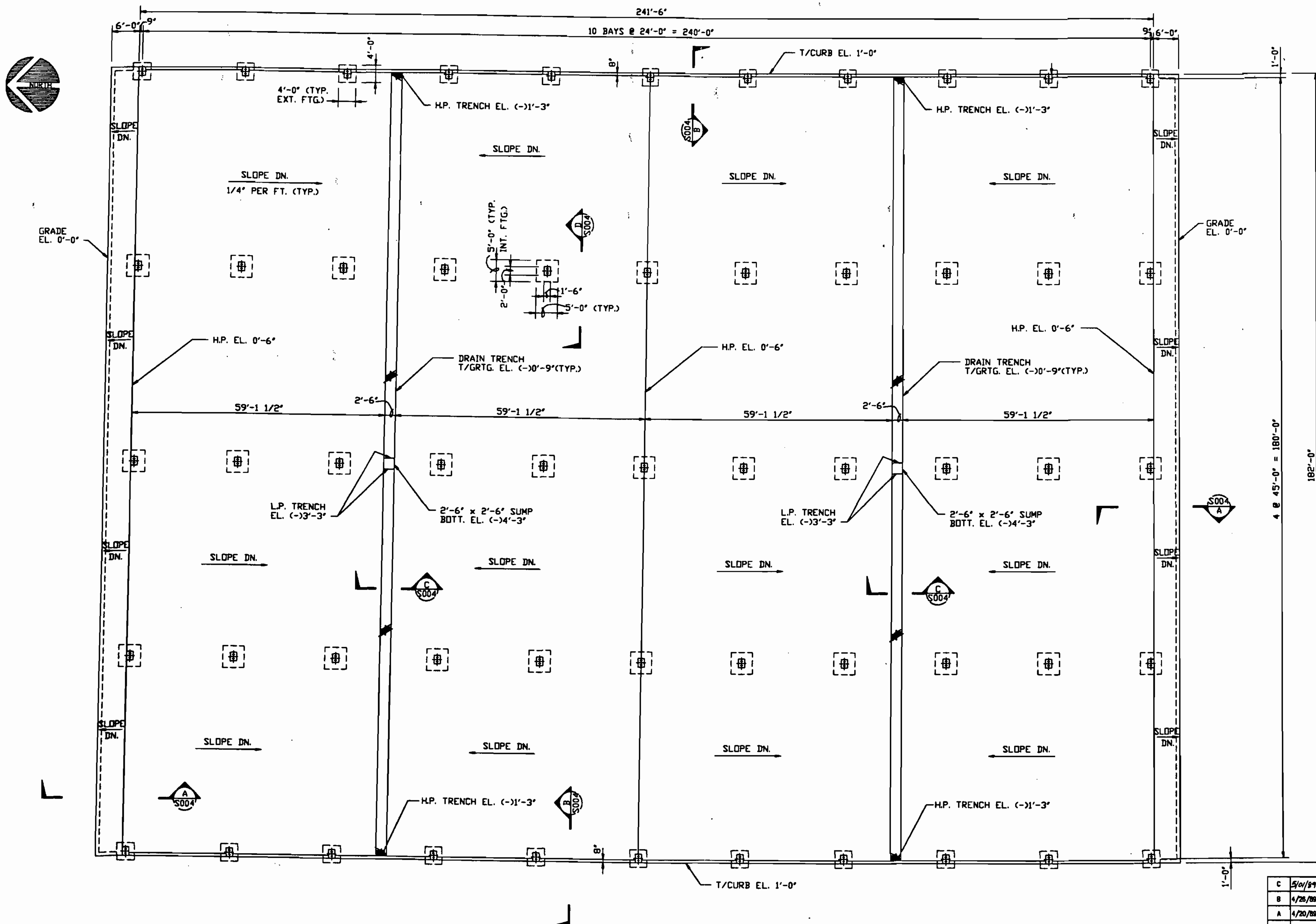
9/25/89

SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

DRAWN M.K. DATE 1/11/89 | APPD | DATE | CHKD | DATE | DRAWING NO. 8813-00-S-012 | REV. E

E-1



NOTES:

1. FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DWG. 8813-00-S-001.

REV.	DATE	REVISION	BY	CHKD
C	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.E.R	JJS
B	4/26/89	ISSUED FOR PERMIT	L.C.D.	
A	4/20/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT

FLORIDA FIRST PROCESSING, INC.

TITLE

RESIDUE STORAGE FOUNDATION PLAN

SCALE: N.T.S.

International WasteEnergy Systems

ST. LOUIS, MO.

DRAWN	DATE 4/19/89	APPD	DATE	DRAWING NO.	REV.
CHKD	DATE		DATE	8813-00-S-013	C

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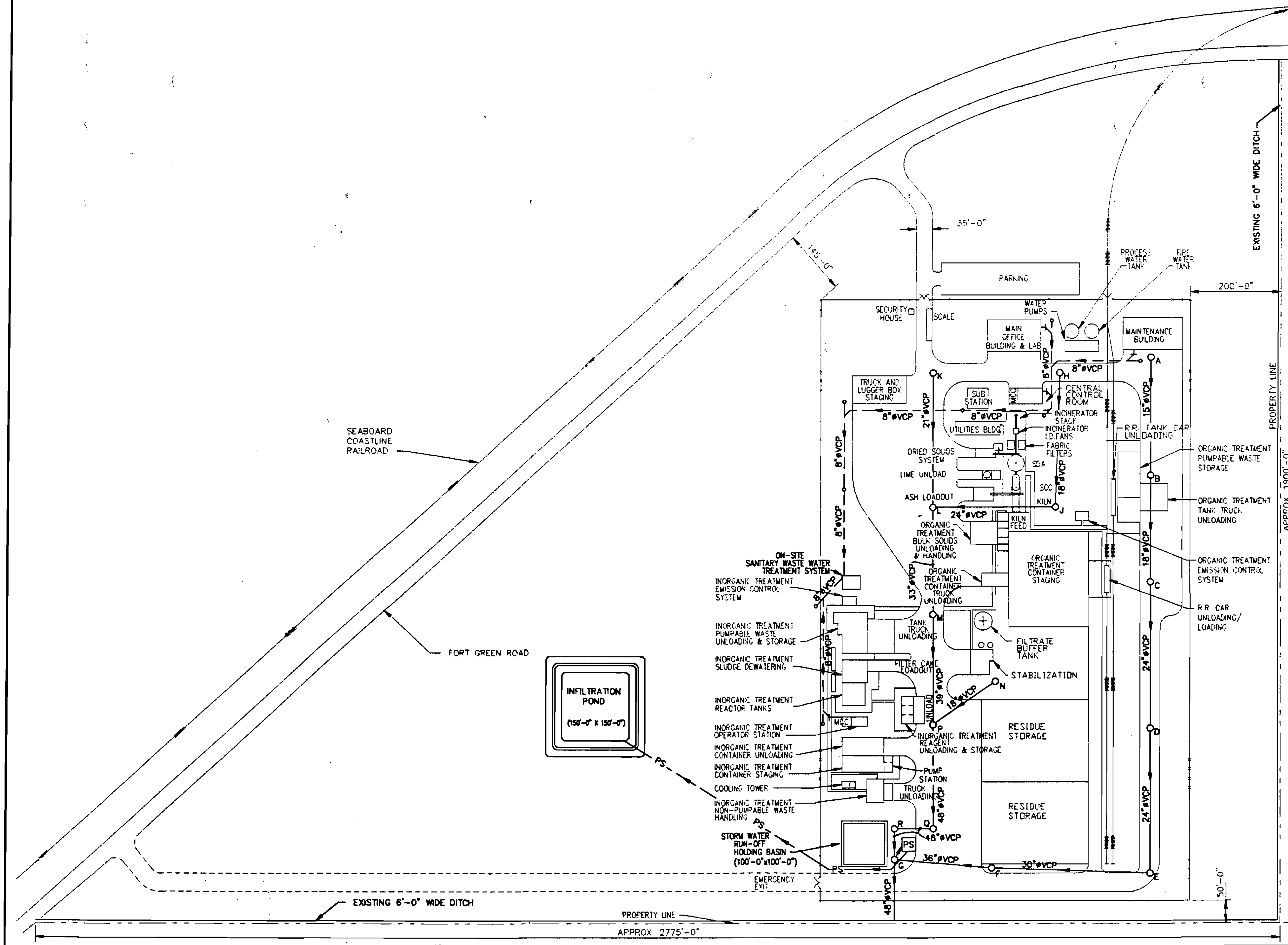
Dick M. Miller 9/25/89

FILE NAME: \8813\8813S013.DWG

5/01/89



GENERAL CIVIL NOTES

1. Vitrified clay pipe (VCP) shall conform to ASTM C-700.
2. All VCP sewer joints are to be ASTM C-425.
3. Cast iron pipe (CIP) fittings shall conform to ASTM-74.
4. All concrete pipe shall conform to ASTM C76.
5. All sewers to have class "B" bedding unless noted.
6. The pipe shall be bedded in angular bedding material conforming to ASTM D 448 "Standard sizes of coarse aggregates for highway construction" Size #67.
7. All concrete to have a minimum compressive strength of 3000 psi at 28 days.
8. All catch basins shall be provided with oil skimmers.

LEGEND

- SANITARY SEWER
- STORM DRAIN
- CATCH BASIN
- CLEAN OUT (C.O.)
- VCP VITRIFIED CLAY PIPE
- CIP CAST IRON PIPE
- 4"ø CIP
- 5'-0" BUILDING FACE
- PS PUMPING STATION
- PS

REV.	DATE	REVISION	BY	CHKD
D	9/20/89	GENERAL REVISIONS	M.K.	RMM
C	5/5/89	GENERAL REVISIONS	S.C.H.	J.L.S.
B	4/24/89	ISSUED FOR PERMIT	J.L.S.	K.L.
A	4/21/89	ISSUED FOR REVIEW	E.L.D.	K.L.

PROJECT
FLORIDA FIRST PROCESSING, INC.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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Dick M. Miller 9/25/89

0 20 100 200 400
SCALE

SCALE:

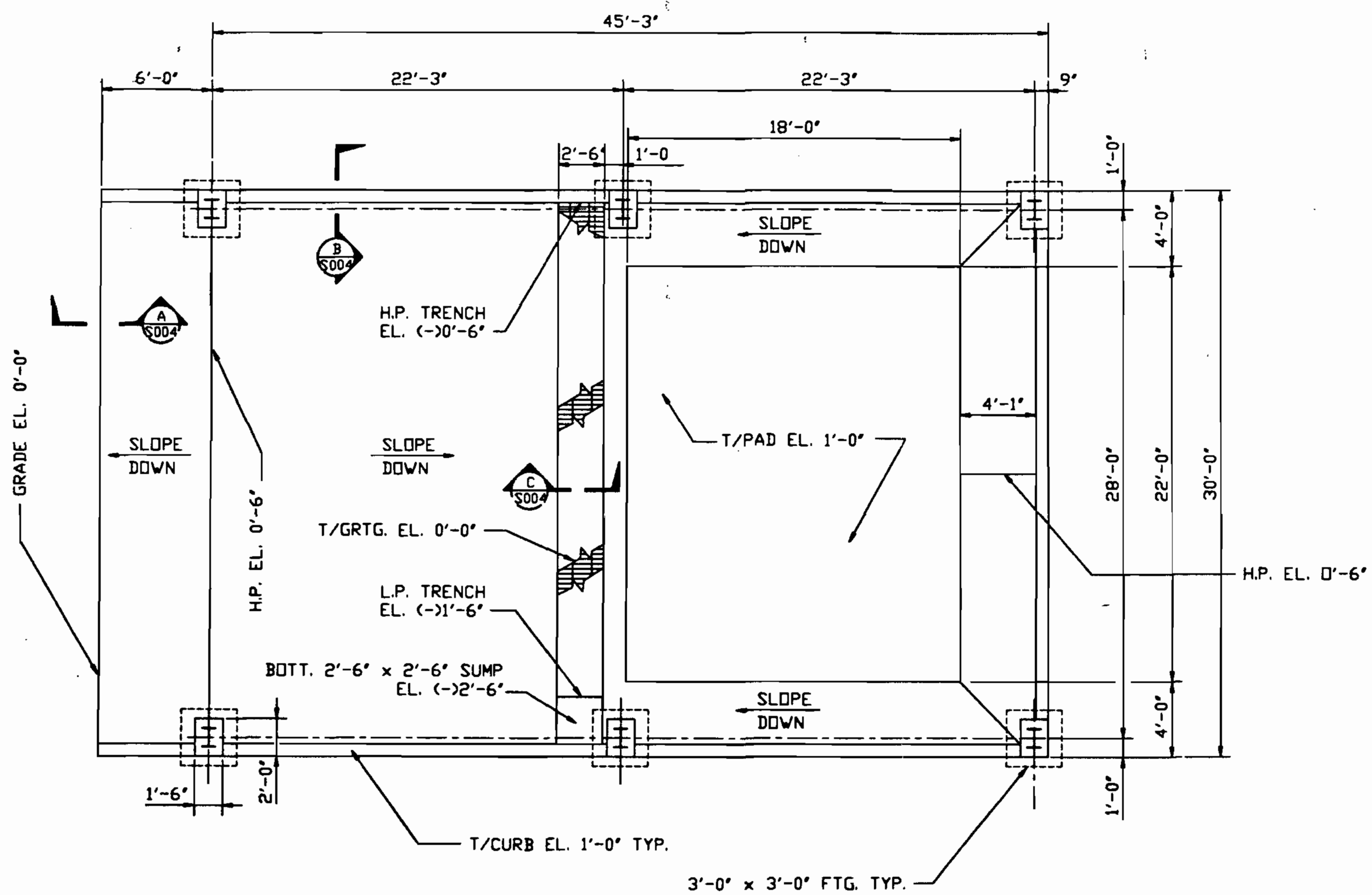
International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
SITE DRAINAGE PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
K.K.	12/07/88			8813-00-S-014	D
CHKD	DATE		DATE		

FILE NAME: 8813S014.DWG

D-2



ASH LOADOUT PLAN

NOTES:

1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING NO. 8813-00-S-001.

2.) FOR LOCATION - SEE SITE PLAN DRAWING 8813-00-M-001

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

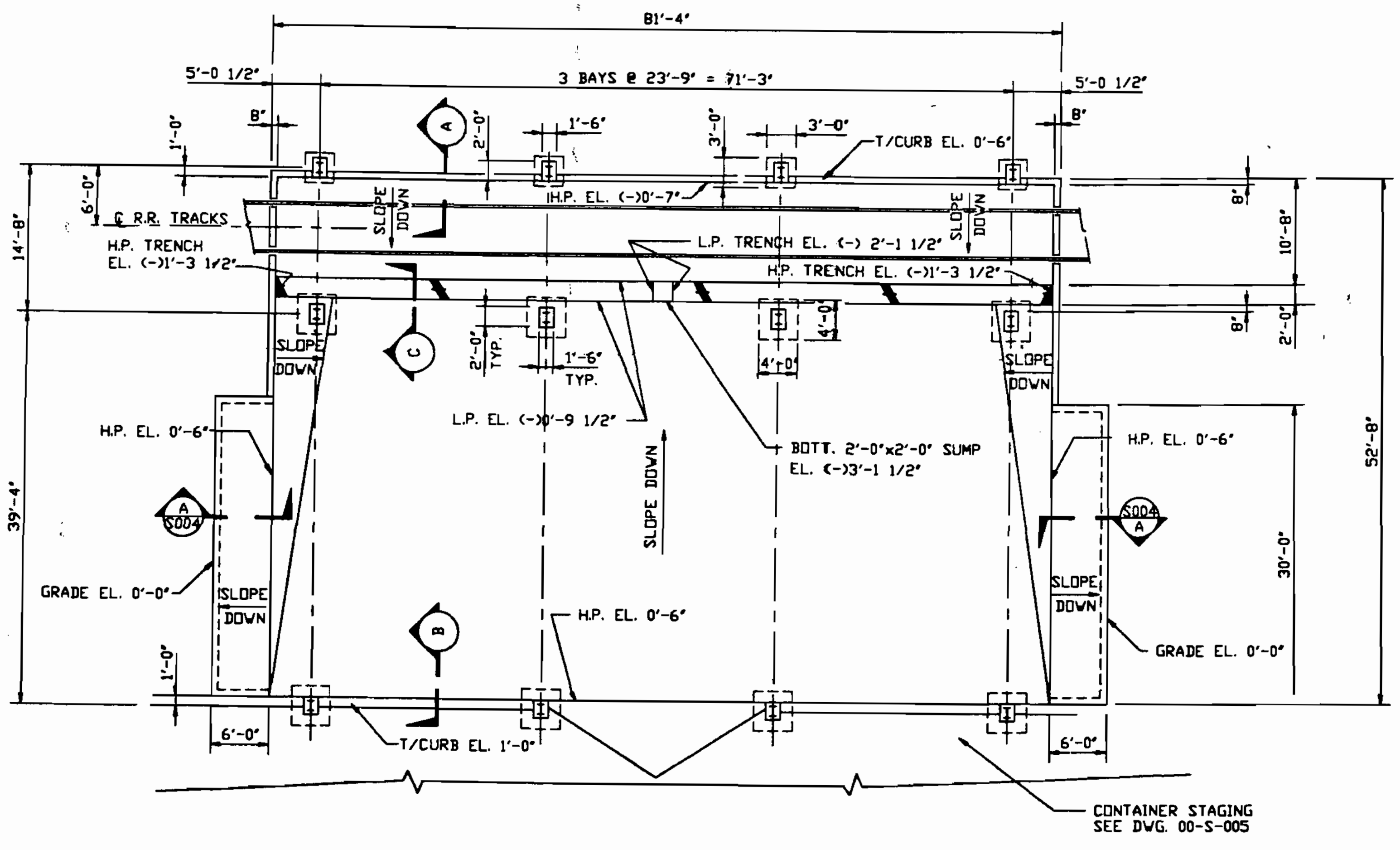
REV.	DATE	REVISION	BY	CHKD
B	4/28/89	ISSUED FOR PERMIT	M.K.	JLS
A	2/3/89	ISSUED FOR CLIENT REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

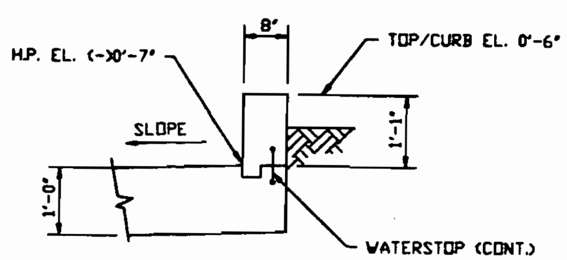
TITLE: ORGANIC TREATMENT ASH LOADOUT FOUNDATION PLAN

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	1/10/89			8813-00-S-015	B
CHKD	DATE		DATE		

FILE NAME: 8813S015.DWG
DATE PLOTTED: 4/28/89



PLAN



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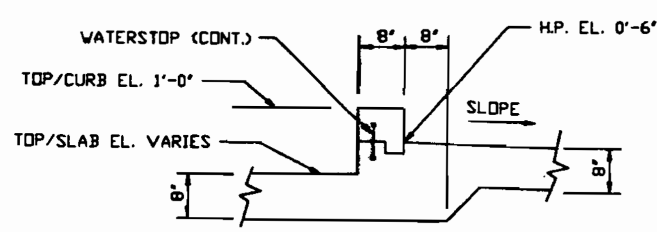

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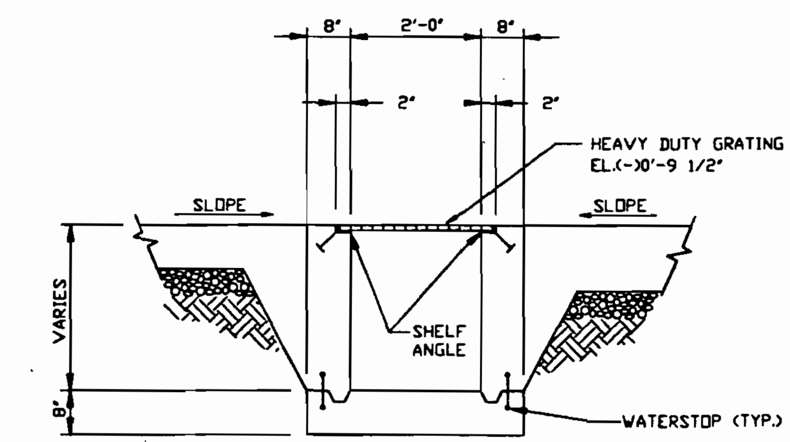

SECTION (C)

NOTES:

1. FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING No. 8813-00-S-001.

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4/25/89

REV.	DATE	REVISION	BY	CHKD
C	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	T.B.R.	JLS
B	4/26/89	ISSUED FOR PERMIT	L.C.D.	
A	4/25/89	ISSUED FOR INTERNAL REVIEW	M.K.	

SCALE: NTS

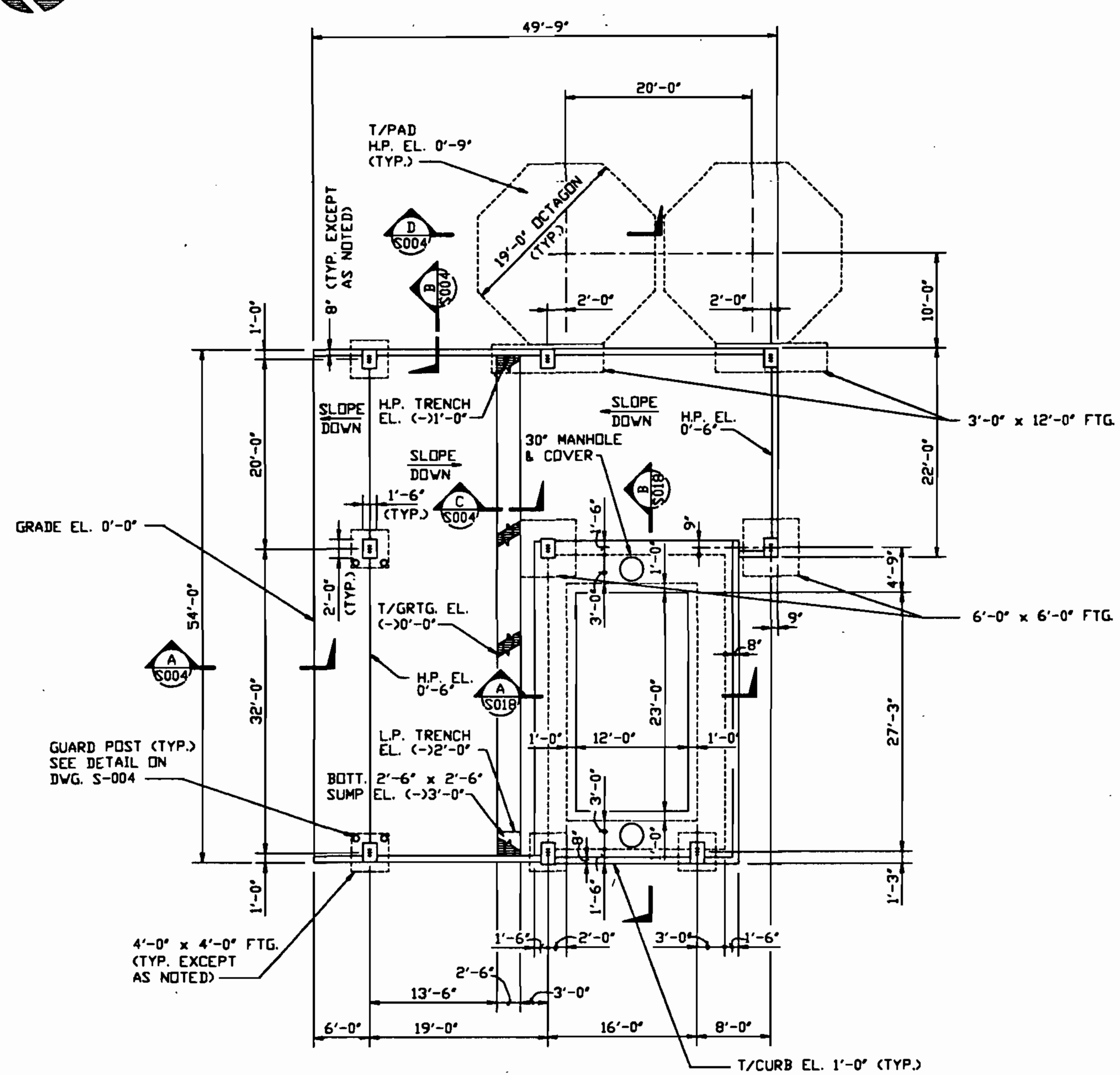
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT: FLORIDA FIRST PROCESSING, INC.

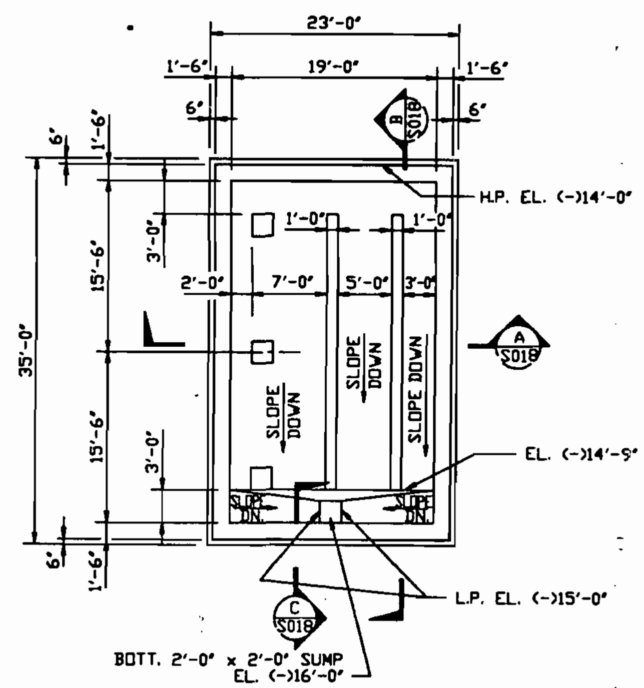
TITLE: R.R. CAR LOADING/UNLOADING FOUNDATION PLAN AND SECTIONS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	4/25/89			8813-00-S-016	C
CHKD	DATE		DATE		

FILE NAME: \8813\8813S016.DWG
5/01/89



PLAN



BASE PLAN

(WASTE RECEIVING BIN)

NOTES:

1. FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DWG. No. 8813-00-S-001.

DICK M. MILLER CERTIFICATE No. 20927 STATE OF FLORIDA REGISTERED ENGINEER

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International WasteEnergy Systems
ST. LOUIS, MO.

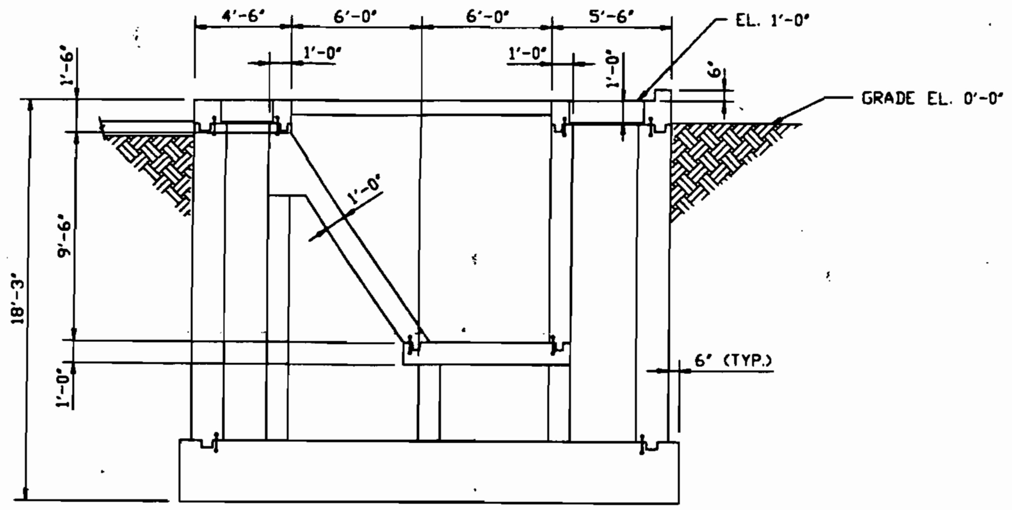
REV.	DATE	REVISION	BY	CHKD
B	5/05/89	ISSUED FOR PERMIT	M.K.	DZS
A	5/1/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: STABILIZATION FOUNDATION PLANS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	5/2/89			8813-00-S-017	B

DATE PLOTTED: 5/2/89 FILE NAME: \8813\S017.DWG



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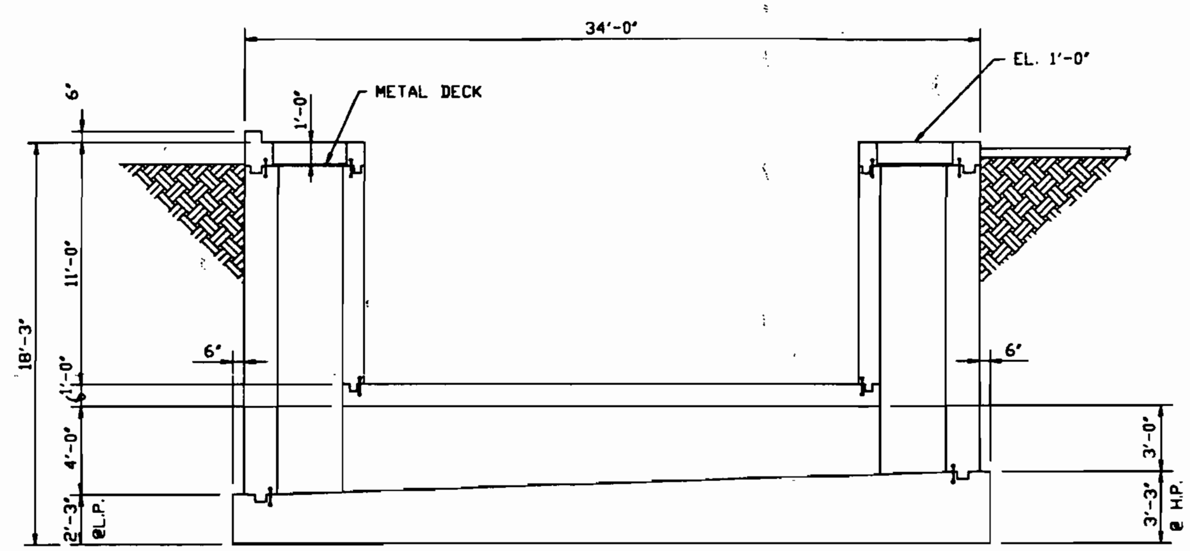

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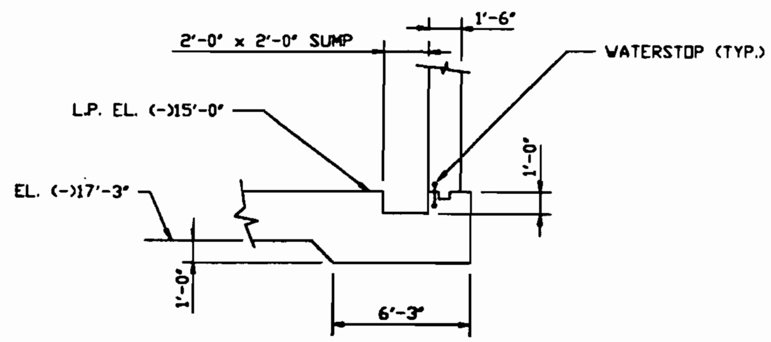

SECTION C S-017

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[signature] 9/25/89

REV.	DATE	REVISION	BY	CHKD
B	5/05/89	ISSUED FOR PERMIT	M.K.	JLS
A	5/1/89	ISSUED FOR INTERNAL REVIEW	M.K.	

SCALE:

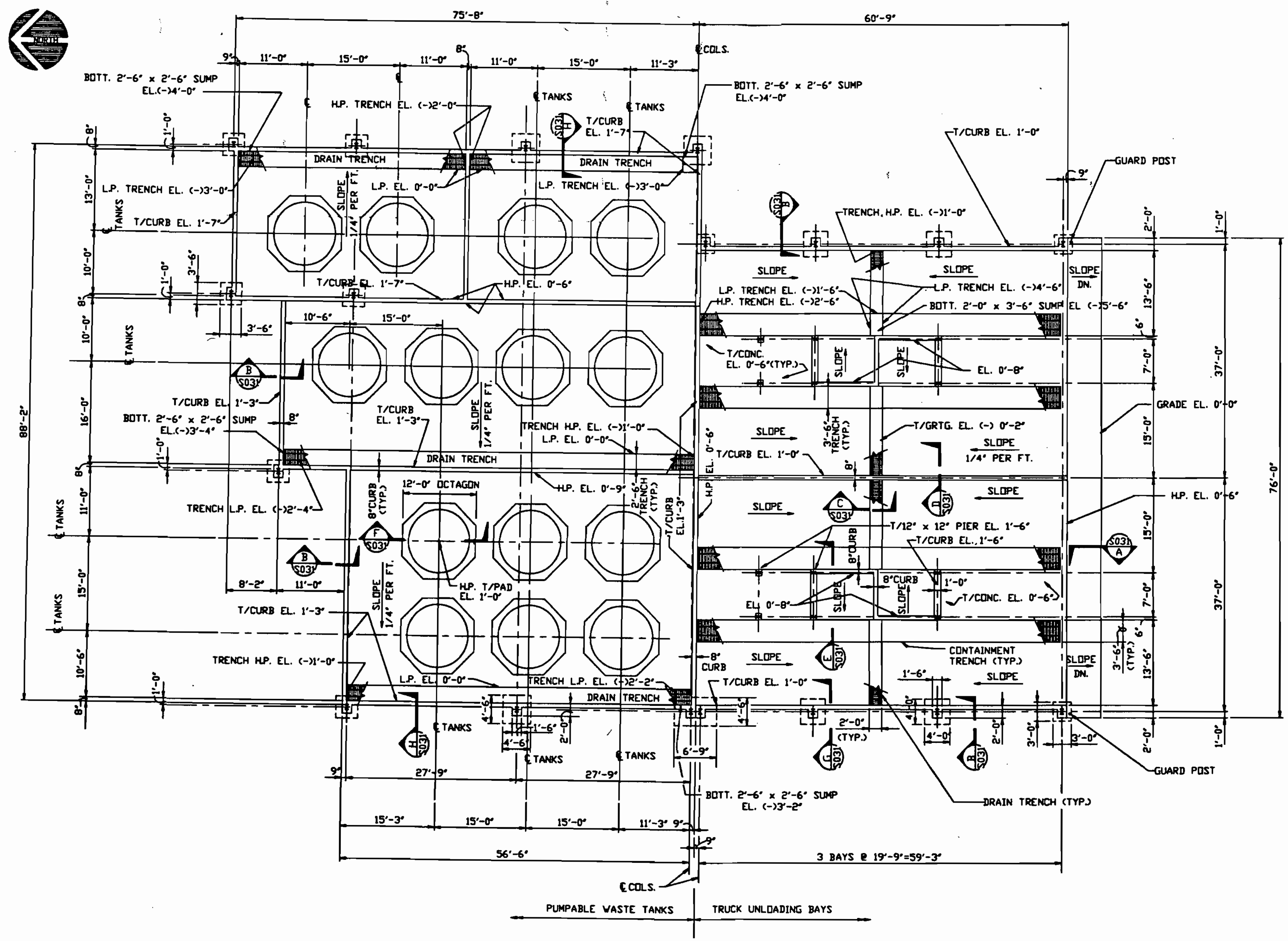
International WasteEnergy Systems
ST. LOUIS, MO.

PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
STABILIZATION FOUNDATION SECTIONS AND DETAILS

DRAWN	DATE	APPD	DATE	DRAWING NO.	REV.
M.K.	5/3/89			8813-00-S-018	B
CHKD	DATE		DATE		

DATE PLOTTED: 5/4/89 FILE NAME: \8813\8813S018.DWG



PLAN

NOTES:

1. FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001.

REV.	DATE	REVISION	BY	CHKD
E	9/14/89	GENERAL REVISION	S.C.H.	
D	5/01/89	GEN. REVISION & REISSUED FOR PERMIT	L.C.D.	
C	4/28/89	ISSUED FOR PERMIT	T.E.R.	J.L.S.
B	3/8/89	ISSUED FOR CLIENT REVIEW	M.K.	J.L.S.
A	1/16/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT PUMPABLE WASTE UNLOADING & STORAGE FOUNDATION PLAN

DRAWN M.K. DATE 1/13/89 | APPD | DATE | CHKD | DATE | DRAWING NO. 8813-00-S-030 | REV. E

SCALE: NTS

International WasteEnergy Systems
ST. LOUIS, MO.

DICK M. MILLER CERTIFICATE No. 20827 STATE OF FLORIDA REGISTERED ENGINEER

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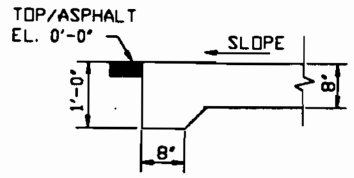
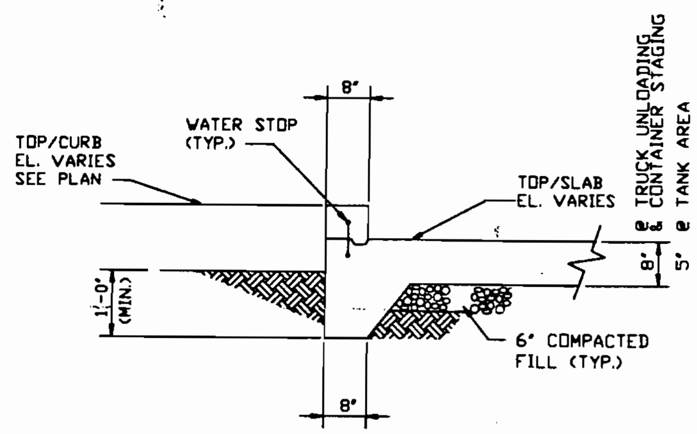
Dick M. Miller 9/15/89

8813S030



SECTION (A) S030, S032, S034, S036



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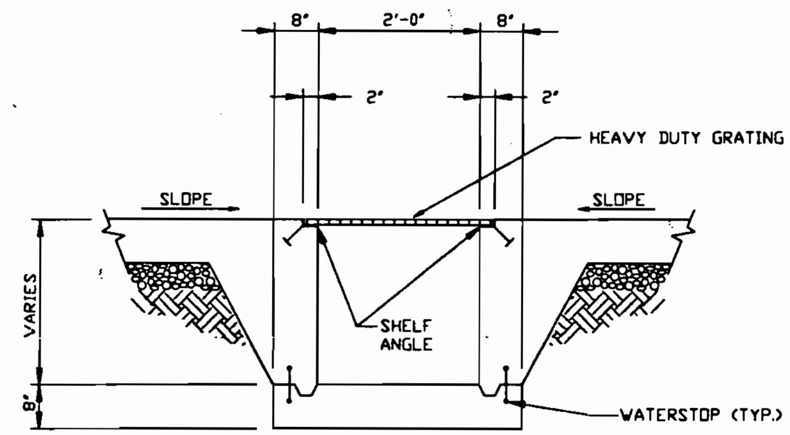

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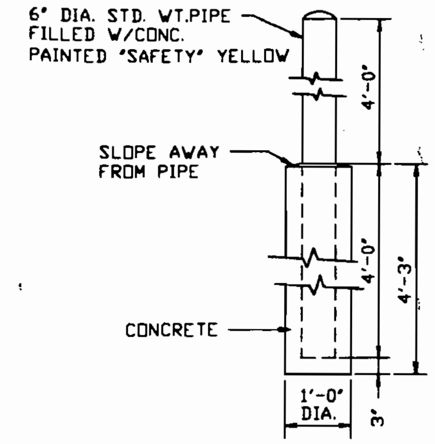

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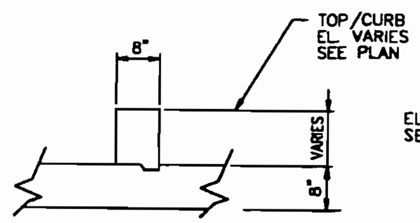

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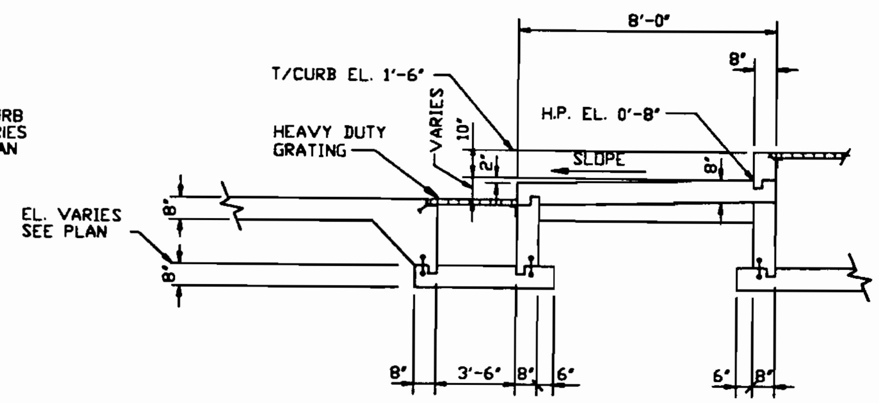

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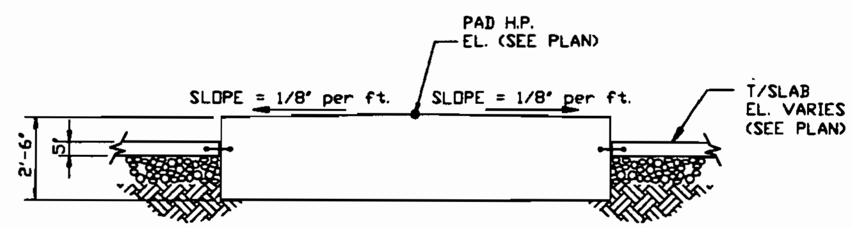

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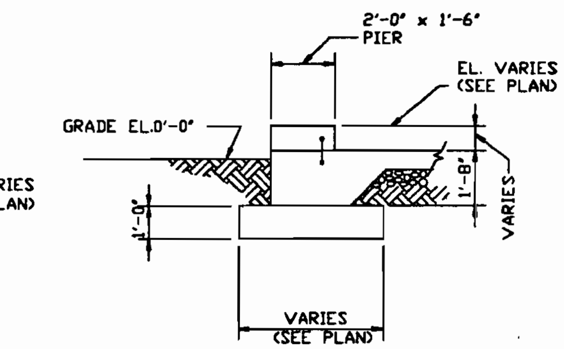

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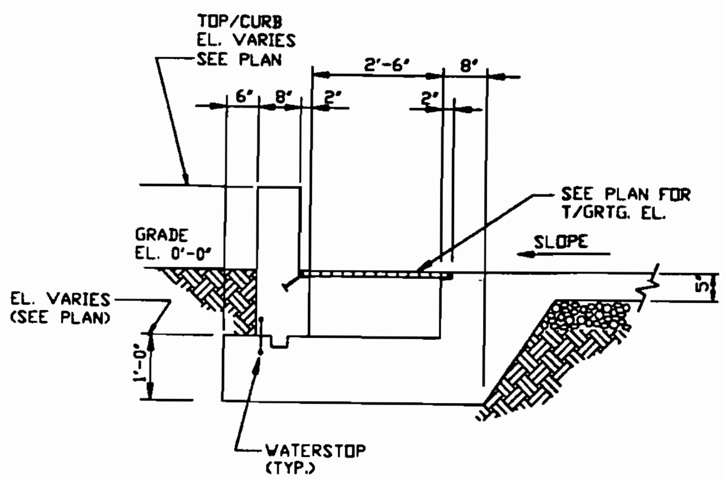

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PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT PUMPABLE WASTE UNLOADING & STORAGE FOUNDATION SECTIONS AND DETAILS

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8813S031

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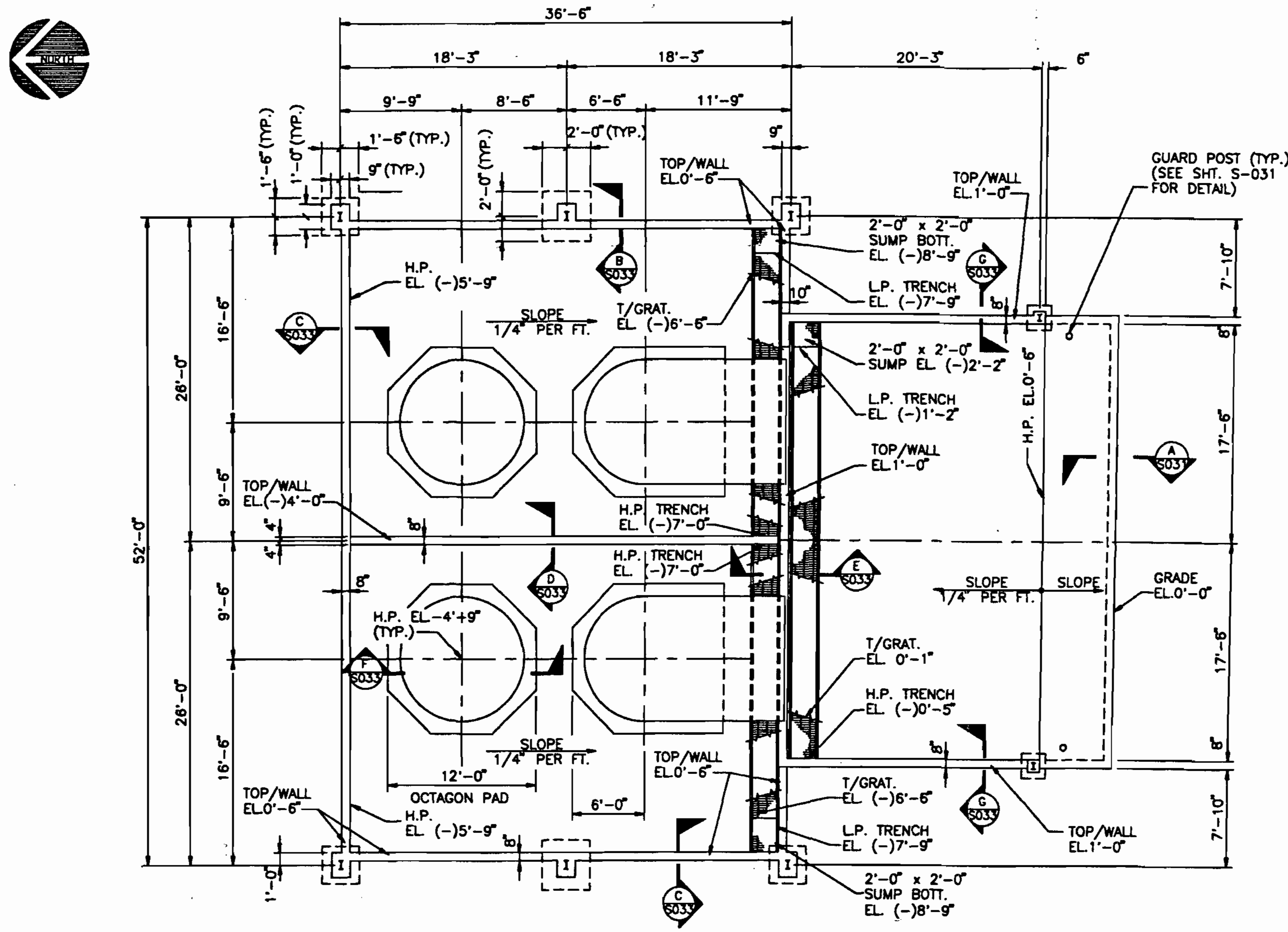

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NOTES:

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PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT NON-PUMPABLE WASTE HANDLING FOUNDATION PLAN

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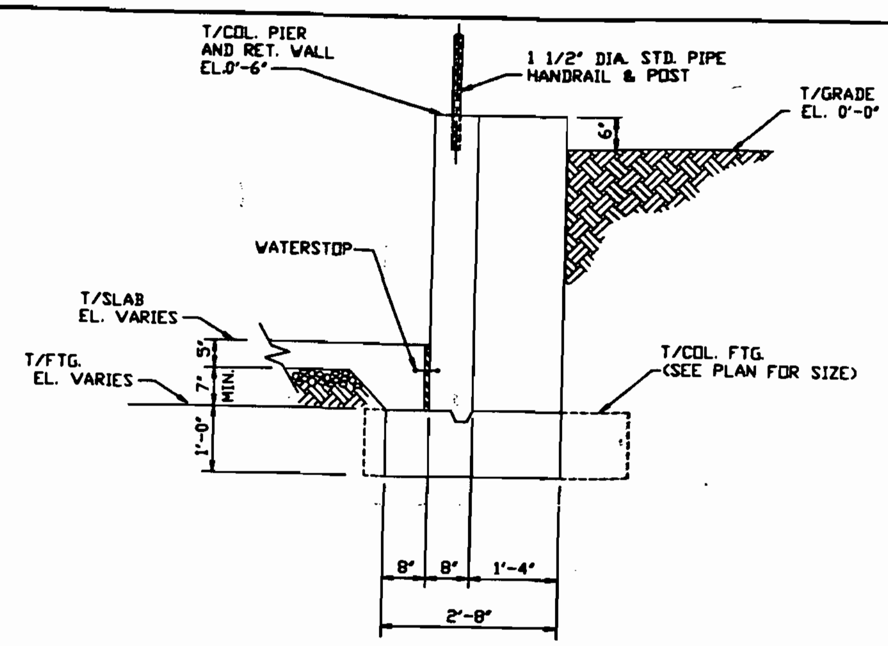

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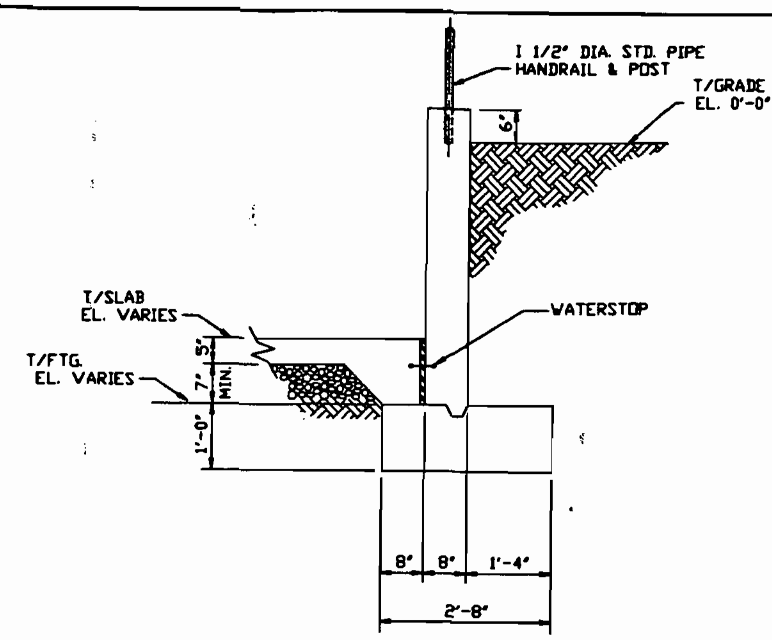

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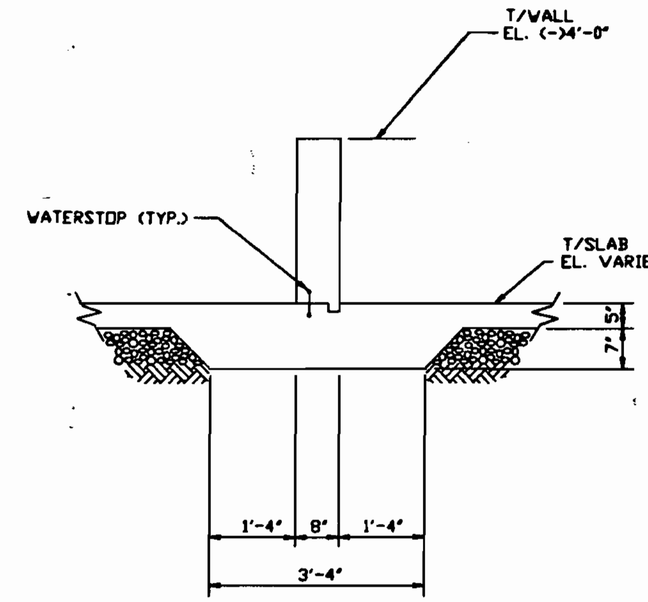

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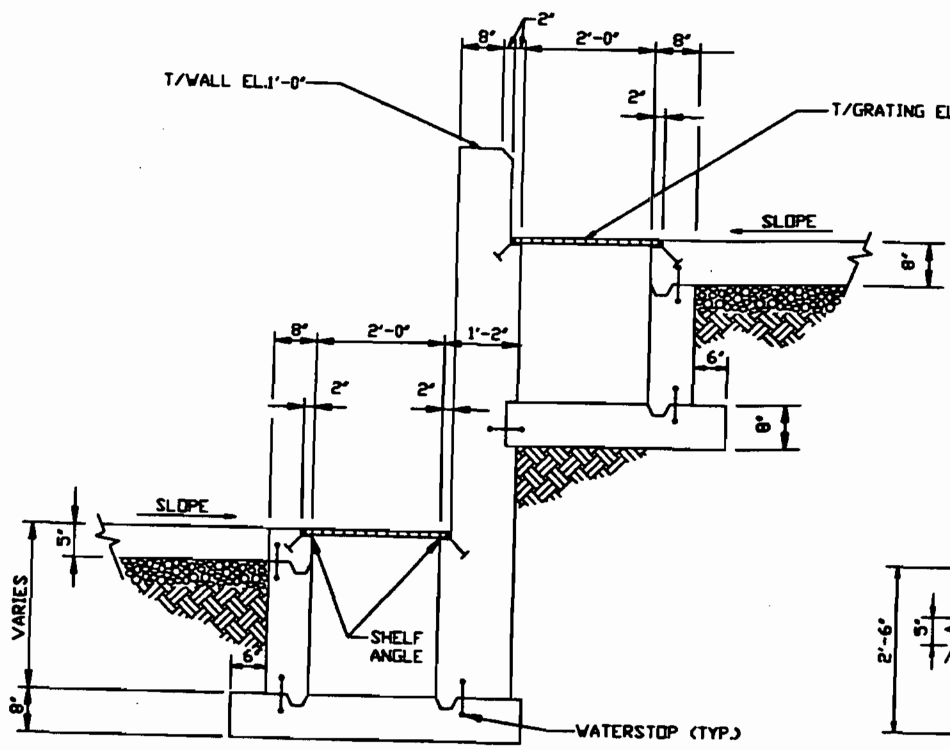

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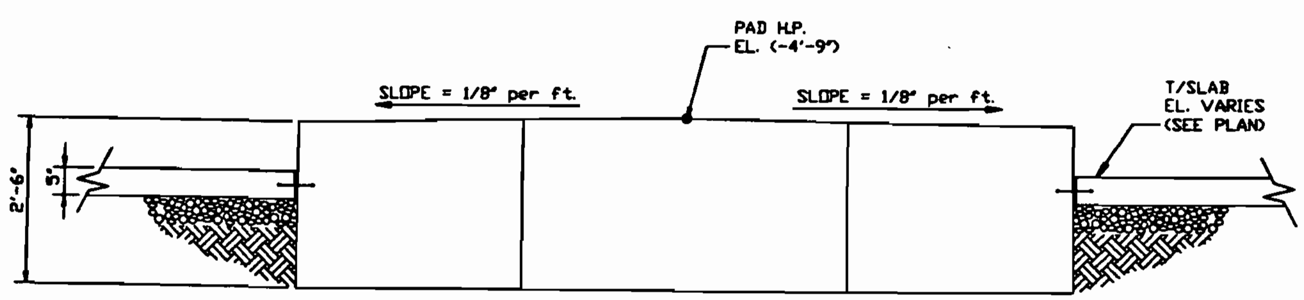

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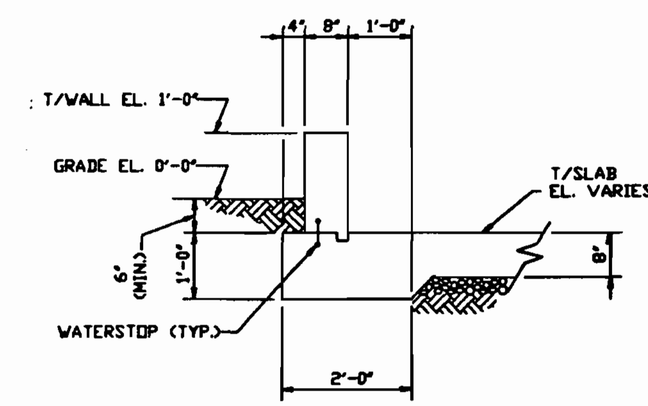

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PROJECT
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International WasteEnergy Systems
ST. LOUIS, MO.

TITLE
INORGANIC TREATMENT
NON-PUMPABLE WASTE HANDLING
FOUNDATION SECTIONS AND DETAILS

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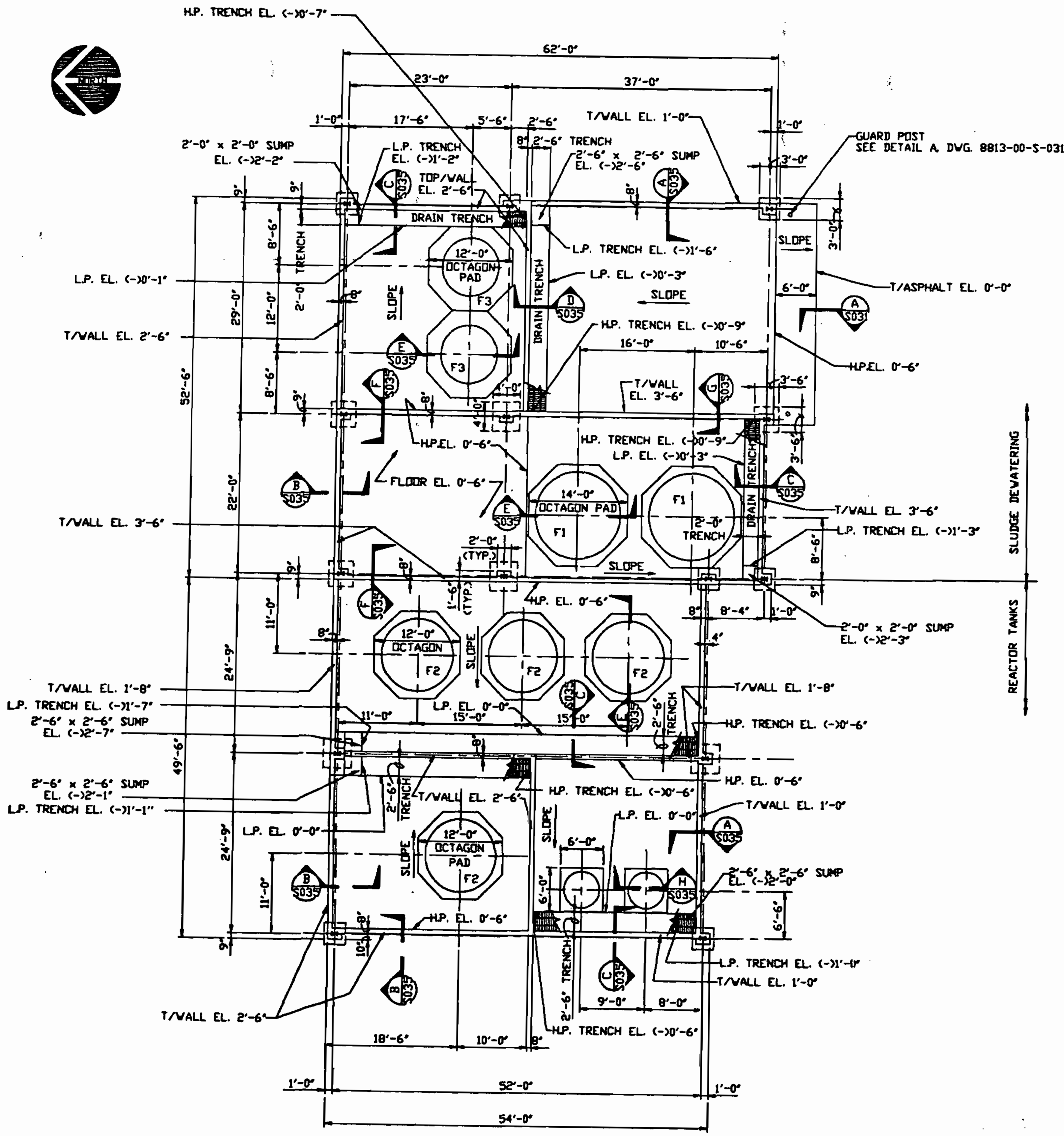

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PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT SLUDGE DEWATERING & REACTOR TANKS FOUNDATION PLANS

DRAWN M.K. DATE 1/16/89 | APPD | DATE | CHKD | DATE | DRAWING NO. 8813-00-S-034 | REV. D

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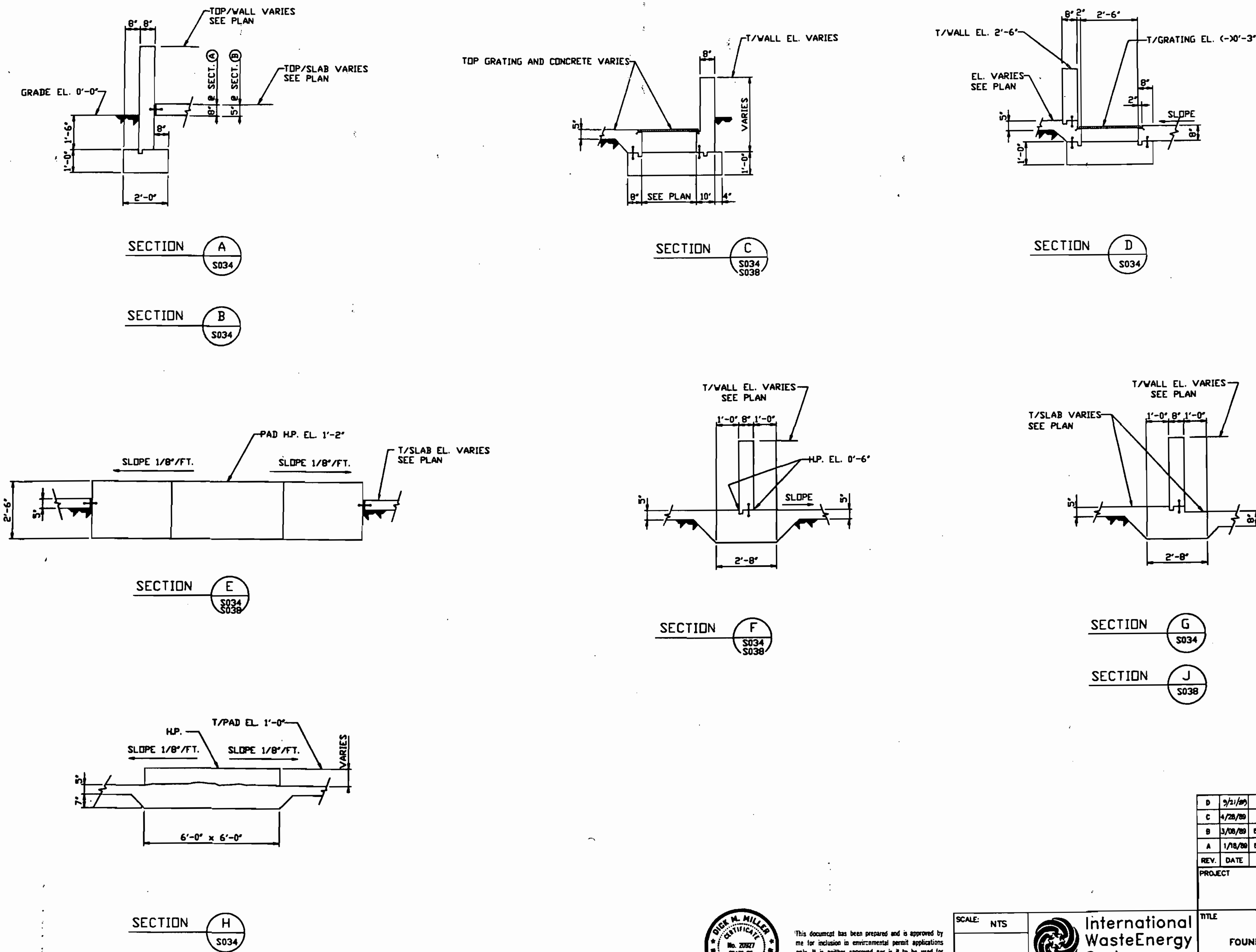

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PROJECT
FLORIDA FIRST PROCESSING, INC.

TITLE
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FOUNDATION SECTIONS & DETAILS

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M.K.	1/17/89			8813-00-S-035	D
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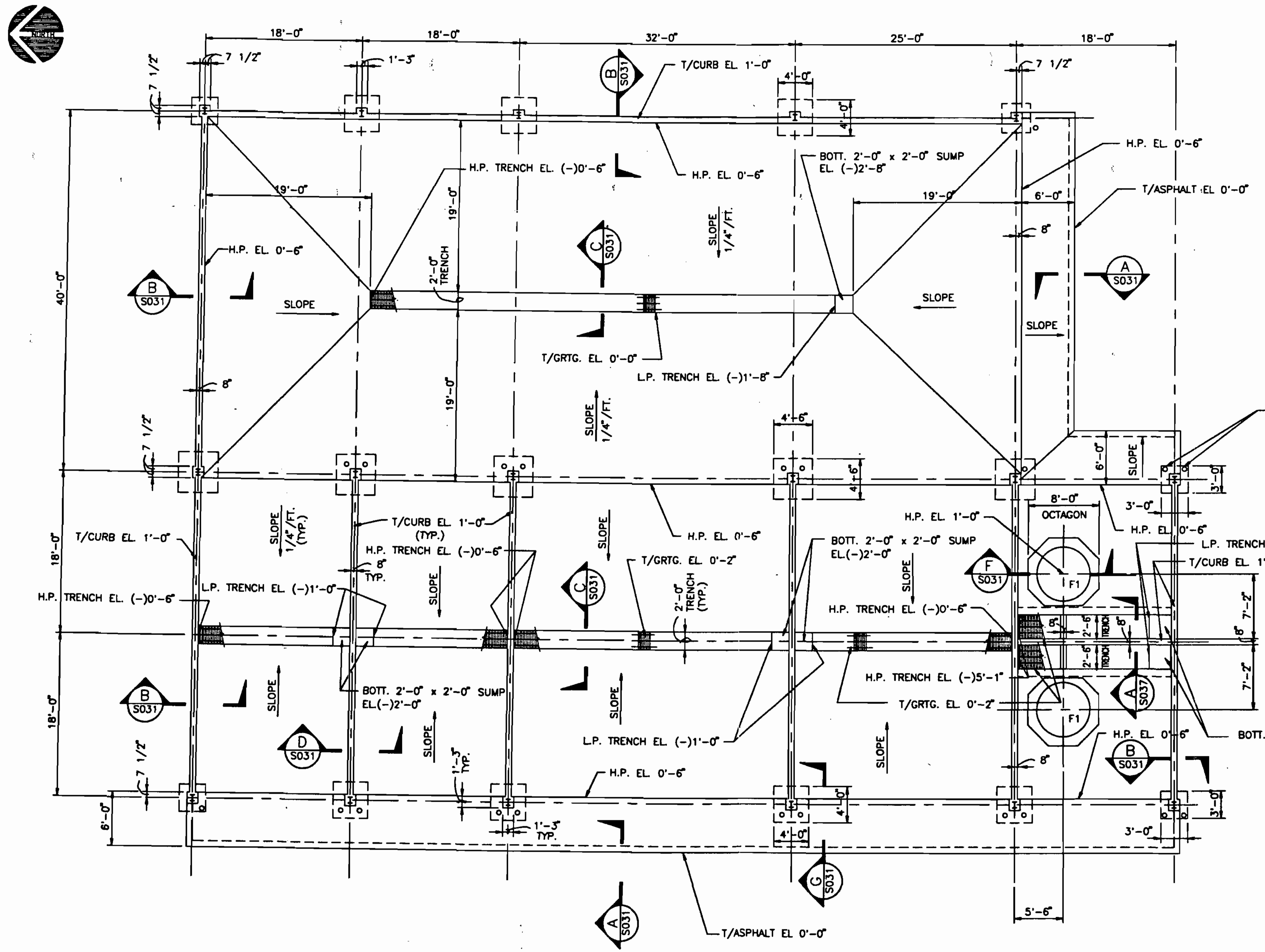

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PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT CONTAINER UNLOADING & STAGING FOUNDATION PLAN

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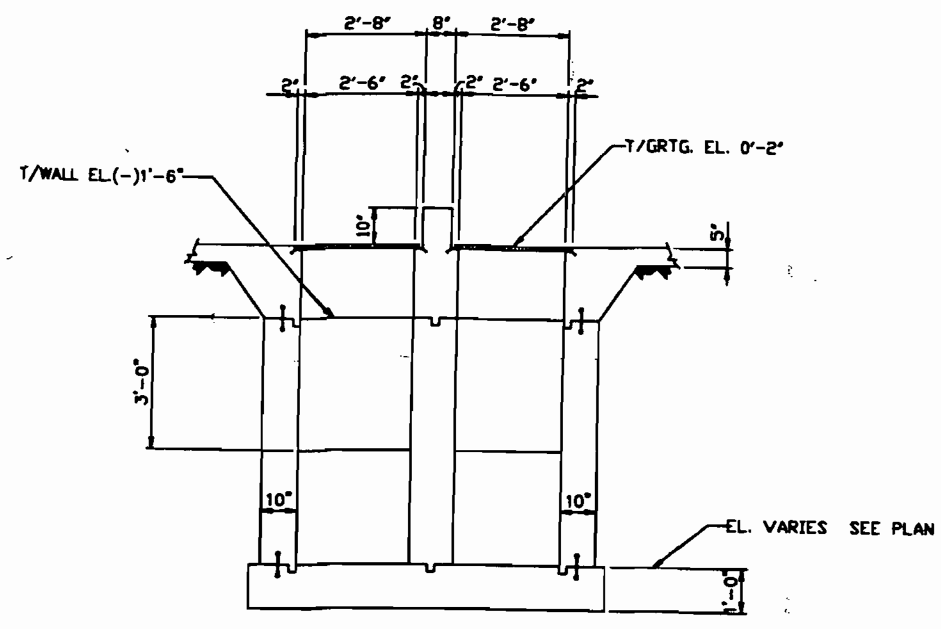

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TITLE
INORGANIC TREATMENT
MISC. FOUNDATION SECTIONS & DETAILS

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CHKD	DATE		DATE	8813-00-S-037	D

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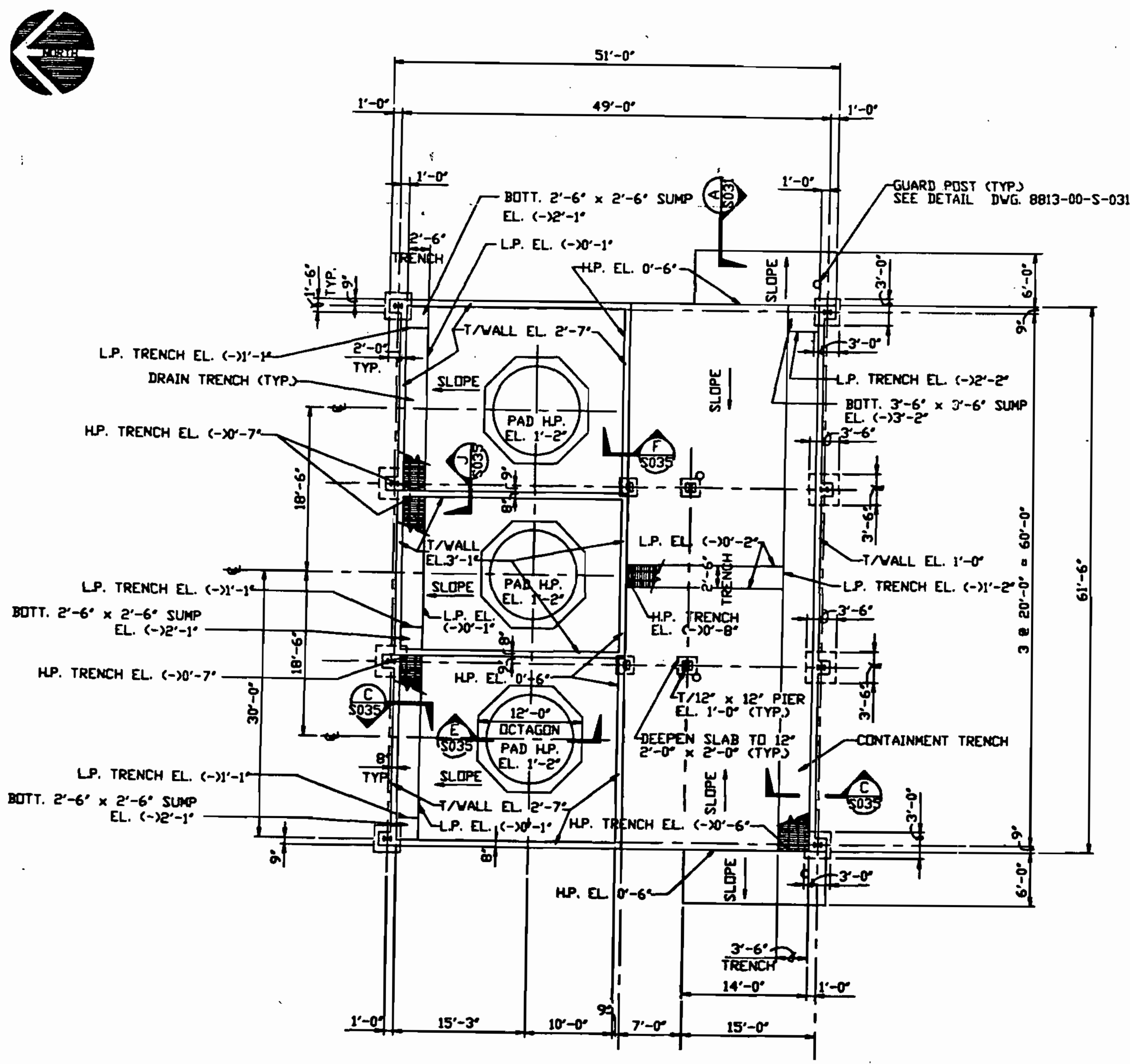

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1.) FOR GENERAL CONCRETE AND FOUNDATION NOTES SEE DRAWING 8813-00-S-001.

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A	1/19/89	ISSUED FOR INTERNAL REVIEW	M.K.	

PROJECT: FLORIDA FIRST PROCESSING, INC.

TITLE: INORGANIC TREATMENT REAGENT UNLOADING & STORAGE FOUNDATION PLAN

SCALE: NTS

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DRAWN M.K. DATE 1/18/89 | APPD | DATE | DRAWING NO. 8813-00-S-038 | REV. E

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8813S038

FLORIDA FIRST PROCESSING, INC.

APPENDIX D-6

TRIAL BURN PLAN

Date: 9/29/89
Revision: 1

TRIAL BURN PLAN

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1.0 TRIAL BURN TESTS

1.1 INTRODUCTION

FFPI proposes to build a rotary kiln incineration system and inorganic waste treatment plant in Polk County, Florida to meet the increasing need for waste treatment and disposal in the Southeastern United States. The wastes being generated in the Southeast and Florida have been characterized in terms of waste type and quantities. Although the general quantity and characteristics of the wastes currently being generated in the area are relatively well known, the potential for a future change in this profile is very high. Therefore, the waste feed characteristics and waste quantity information submitted with this plan are for the purpose of defining the incinerator design basis rather than the specific operating conditions. The trial burn is therefore designed to provide the widest possible range of operating conditions and allow for the combustion of the greatest number of potential waste types. The three trial burn tests are designed to demonstrate various incineration system parameters, so that these demonstrated parameters can be used to establish a range of acceptable operating conditions to be specified in the Operating Permit. The tests are planned by using our Best Engineering Judgement (BEJ) as specified in the regulations.

1.1.1 Summary of Trial Burn Incinerator Operating Parameters

The purpose of the trial burn is to demonstrate several operating parameters, including:

- Compliance with DRE requirements for the POHCs as specified in 40 CFR 264.343;
- Compliance with the draft standards for metals emissions from hazardous waste incinerators;

- The maximum metals emission and metals removal efficiency of the incinerator air pollution control system for metals listed in the draft standards for metal emissions from hazardous waste incinerators;

- Compliance with the draft standards for hydrogen chloride emissions from hazardous waste incinerators; and

- The incineration system limiting operation parameters (maximums, minimums, and/or acceptable operating ranges) for all the significant incineration system variables as required by 40 CFR 264.345.

In addition to demonstrating DREs for the POHCs: carbon tetrachloride, chlorobenzene, tetrachloroethylene, trichlorobenzene and hexachloroethane, demonstrating the maximum metals emission rate, and demonstrating the removal efficiency of the air pollution control system for metals, the trial burn runs are intended to demonstrate operating system performance limits or parameters as follows:

- Minimum combustion temperature of 1,440°F in the rotary kiln;

- Minimum combustion temperature of 1,800°F in the SCC;

- Maximum system thermal capacity of 75 MM Btu/hr;

- Maximum rotary kiln thermal capacity of 75 MM BTU/hr;

- Maximum CO concentration (100 ppm hourly rolling average) in combustion flue gas;

- Maximum combustion gas flow of 68,555 acfm at 365°F at the stack;

- Maximum feed rate of waste to rotary kiln and SCC of 16,550 lb/hr;

- Maximum feed rate of non-pumpable wastes to rotary kiln of 10,400 lb/hr;

- Maximum feed rate of containerized wastes to rotary kiln of 6,000 lb/hr (equivalent to 24 55-gallon containers/hr);

- Maximum feed rate of low-Btu waste to SCC of 3,000 lb/hr;

- Minimum solids retention time in rotary kiln of 30 minutes corresponding to a maximum kiln rotational speed of 1.4 rpm;

- Maximum container size for direct feed of solids containing combustibles (85-gallon fiber or plastic drums) to rotary kiln;

- Maximum loads of ash and organic chlorine to the incinerator air pollution control system from the incinerator of 6,338 lb/hr and 1,202 lb/hr, respectively;

- Maximum feed rate of inorganic waste treatment system filtrate to spray dryer of 25,000 liters/hr.

- Maximum and minimum fabric filter pressure drop; and

- Minimum HCl removal efficiency of 99 percent.

Certain operating parameters are not appropriate for direct measurement or direct specification as minimum acceptable operating conditions, but must be specified for the purposes of ensuring safe and efficient operation of the incinerator during the trial burn. Such parameters will be specified based upon BEJ, equipment performance, manufacturer's design, and operating and engineering specifications and include the following parameters:

- Maximum heat release rate to kiln of 75 MM Btu/hr and maximum heat release rate to SCC of 40 MM Btu/hr;

- Maximum burner waste viscosity (150 SSU) for efficient atomization;

- Minimum waste heating value (6,500 Btu/lb) for efficient burner firing;

- Minimum line pressure of waste (20 psig) to burner for efficient firing;

- Minimum line pressure of atomizing media (30 psig) to burner for efficient firing;

- Minimum 3 percent concentration of O_2 (dry basis) in the combustion gas exhaust averaged over 60 minutes;

- Minimum combustion chamber draft;

- Maximum chamber temperatures (kiln, SCC 2,400°F);

- Maximum temperature of inlet gas to fabric filter (500°F);

- Safety interlock parameters for plant safety and protection of system components from damaging conditions;

- Sources of liquid waste feeds to kiln burner, kiln nozzles, and SCC burners; and

- Maximum turndown ratio for each burner in both the rotary kiln and SCC.

1.1.2 Trial Burn Regulatory Requirements

40 CFR 270.62(b)(2) requires that the following information be furnished as part of the Trial Burn Plan:

(1) An analysis of each waste or mixture to be burned, including:

- Heat value of mixture;

- Viscosity (if applicable) or description of physical form of waste;

- Identification of any hazardous organic constituents listed in part 261, Appendix VIII that are present in the waste to be burned; and

- An approximate quantification of the hazardous constituents in the waste mixture within the precision of the specified test methods.

This information is included in Sections 1.2 and 1.3 of the trial burn plan.

(2) A detailed engineering description of the incineration system for which the permit is sought, including:

- Manufacturer's name and model number (if available);

- Type of incinerator;

- Linear dimensions of incinerator, including cross-sectional area of combustion chamber;

- Description of the auxiliary feed system;

- Capacity of prime mover;

- Description of automatic waste feed cutoff system;
- Stack gas monitoring and pollution control equipment;
- Nozzle and burner design;
- Construction materials; and
- Location and description of temperature, pressure, and flow indicating and control devices.

This information is included in the attached Section D of the Part B permit application.

(3) A detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

This information is included in Sections 3 and 4 of the trial burn plan. Reference methods are reproduced in Attachment D-6-1.

(4) A detailed test schedule for each waste for which the trial burn is planned.

This information is included in Section 1.4 of the trial burn plan.

(5) A detailed test protocol for each waste identified, the ranges of temperature, waste feed rate, combustion gas velocity, use of auxiliary fuel, and any other relevant parameters that will be varied to affect DRE.

This information is included in Section 1.4 of the trial burn plan.

(6) A description of, and planned operating conditions for, any emission control equipment used.

This information is included in Section 1.4 of the trial burn plan.

(7) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling the emissions in case of an equipment malfunction. This information is included in Section 1.4 of the trial burn plan.

40 CFR 270.62(b)(6) requires that the following information be determined or developed as a result of the trial burns. During each trial burn (or as soon after as is practicable) the applicant must make the following determinations:

- Quantitative analysis of the trial POHCs in the waste feed to the incinerator;

- Quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, O_2, and HCl;

- Quantitative analysis of the scrubber waste (if any), ash residues, and any other residues, for the purpose of estimating the fate of the trial POHCs;

- Computation of DRE in accordance with the DRE formula in 40 CFR 264.343(a). The calculation methodology is included as Attachment D-6-2;

- If the HCl emission rate exceeds 1.8 kg/hr (4 lb/hr), a computation of HCl removal efficiency in accordance with 40 CFR 264.343(b);

- Computation of particulate emissions in accordance with 40 CFR 264.343(c);

- An identification of sources of fugitive emissions and their means of control;

- Measurement of average, maximum, and minimum temperatures and combustion gas velocity; and

- Continuous measurement of CO in the exhaust gas.

(8) Draft standards for emissions of products of incomplete combustion (PICs) from hazardous waste incinerators will require continuous measurement of total hydrocarbons (THC) in the exhaust gas.

(9) Draft standards for emissions metals and hydrogen chloide from hazardous waste incinerators will require determination of the maximum metals emissions from the incineration and determination of the air pollution control system remove efficency for metals.

Certified reports of the operations and results must be filed to procure an Operating Permit. Reporting of trial burn test results is discussed in Section 1.4.10. Data reporting forms are reproduced in Attachment D-6-3.

1.2 SELECTION OF POHCS AND METALS

POHCs and metals are selected below in accordance with RCRA requirements, air quality regulatory requirements, and draft standards for metal emissions from hazardous waste incinerators.

1.2.1 Selection of POHCs

We anticipate that the type of Appendix VIII compounds in the waste feeds will change over time. In order to have enough flexibility for future operation, we will assume that all Appendix VIII compounds, with the exception of PCBs, waste code K001, and waste codes F020-F023 and F025-F028, will be handled by the FFPI incinerator. The selection of the POHCs for the trial burn tests is based on this assumption.

The five POHCs that will be used for the trial burn are the following:

- Tetrachloroethylene (C_2Cl_4);
- Chlorobenzene (C_6H_5Cl);
- Carbon tetrachloride (CCl_4);
- 1,2,4-Trichlorobenzene ($C_6H_3Cl_3$); and
- Hexachloroethane (C_2Cl_6).

Tetrachloroethylene was chosen as a POHC because:

- It has a relatively high boiling point of 121°C;
- It has a very high temperature (920°C) for a 99.99% destruction efficiency in air at a mean residence time of two seconds (T 99.99[2]);
- It is ranked relatively high (No. 27) in the thermal stability ($TSLoO_2$) listing. (The $TSLoO_2$ listing was developed by Dr. Dellinger at the University of Dayton Research Institute and is soon to be incorporated into EPA Guidance for hazardous waste incinerator permits.); and
- It represents a chlorinated olefinic compound.

Carbon tetrachloride was chosen as a POHC because:

- It has a boiling point of 77°C, and thus is a volatile POHC;
- It has one of the lowest heats of combustion of Appendix VIII compounds, 0.24 Kcal/g; and
- It has a fairly high temperature (820°C) for a 99.99% DRE in air.

Chlorobenzene was chosen as a POHC because:

- It has a boiling point of 132°C, and is one of the highest-boiling volatile POHCs;
- It has an intermediate temperature (790°C) for a 99.99% DRE in air at a mean residence time of two seconds (T 99.99[2]);
- It has one of the highest thermal stabilities (ranked No. 3) at low O_2 concentrations ($TSLoO_2$); and
- It represents a chlorinated organic compound.

1-,2-,4-Trichlorobenzene was chosen as a POHC because:

- It is ranked relatively high (No. 17) on the $TSLoO_2$ listing;
- It has a fairly high temperature (790°C) for a 99.99% DRE in air;
- It has a melting point of 17°C and can readily be incorporated into the sludge or solid waste feed;
- It is recommended by EPA Region IV as one of the semivolatile POHCs to be used in solid waste feeds; and
- It represents a chlorinated aromatic compound.

Hexachloroethane was chosen as a POHC because:

- It is a solid at ambient conditions and can be readily incorporated into the solids feeds; and
- It has a relatively low heat of combustion of 0.46 Kcal/g, for an Appendix VIII compound.

All the selected POHCs are expected to be present in actual waste to be received by FFPI. Further, all the compounds are a source of organic chlorine, which will enable performance testing of the incinerator air pollution control system. These POHCs will be used in the trial burn to demonstrate FFPI's capability of incinerating all Appendix VIII compounds, with the exception of PCBs and dioxins.

TABLE 1.2.1-1

CHARACTERISTICS OF POHCS SELECTED FOR TRIAL BURN ANALYSIS

POHC	Chemical Formula	TSLoO$_2$ Class	Heat of Combustion (kcal/gram)
1,2,4-Trichlorobenzene	$C_6H_3Cl_3$	1	3.40
Tetrachloroethene (perchloroethylene)	C_2Cl_4	2	1.19
Tetrachloromethane (carbon tetrachloride)	CCl_4	5	0.24
Hexachloroethane	CCl_3CCl_3	6	0.46
Chlorobenzene	C_6H_5Cl	1	6.60

1.2.2 Selection of Metals

The maximum emissions of metals from the incinerator stack and the removal efficiency of the air pollution control system will be determined for metals listed in the Draft standards for metals emissions from hazardous waste incinerators. Metals listed in the Draft standards are antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium. Metal compounds will be added to the containerized solid and high-Btu liquid waste feeds to the incinerator during trial burn test number three and to the sludge waste feed and low-Btu liquid feed to the incinerator during trial burn test number two. These two tests will determine the actual removal efficiency of the air pollution control system for each metal and the maximum emissions of each metal from the incinerator at trial burn test conditions.

Sludge waste feed to the kiln and low-Btu liquid waste feed to the SCC during trial burn test number two will be spiked with metal compounds (or pure metals) containing antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, as required, such that concentrations of these metals in the wastes used during the test will be at or near the maximum operating levels expected for the incinerator during actual operation. Containerized solid waste feed to the kiln and high-Btu liquid waste feeds to the SCC during trial burn test number three will be spiked with the above-listed metals such that the metals feed rates to the incinerator are the same as for trial burn test number two.

The maximum emissions and control efficiencies for the listed metals will be calculated from the trial burn results. All the metals are expected to be present in actual wastes to be received by the FFPI facility. The two trial burn tests will allow FFPI to demonstrate the capability of burning solid, sludge, and liquid wastes containing the listed metals in accordance with the Draft standards.

1.3 SELECTION OF WASTES TO BE BURNED

It is expected that during full scale operation, the incinerator will burn several waste types simultaneously, including: bulk solids, containerized solid and sludge wastes, organic liquids, aqueous liquids, pumpable sludges, and/or waste derived fuels. The combination of wastes burned will depend on the types of wastes received at FFPI, the heating value, metals content, chlorine content, and other characteristics, as well as a mass and heat balance which will define the combined feed rates of the wastes burned and enable compliance with the operating limits delineated in Part 1.1 of the Trial Burn Plan.

The characteristics of the general waste types to be burned in the FFPI incinerator are listed in Table 1.3-1. As the types of wastes received at FFPI will vary, it is not possible to conduct trial burn tests for every possible combination of waste feeds. The three trial burn tests, however, will demonstrate the capability of the incinerator to (1) burn each of the waste types listed in Table 1.3-1, (2) burn three combinations of wastes, and (3) operate in accordance with State and Federal RCRA and Air Pollution regulations at or near the operating limits specified in Part 1.1 of the trial burn plan.

1.3.1 Waste Types to be Burned and POHC Content of Wastes

The following waste types will be burned in the incinerator during the trial burn:

TABLE 1.3-1

ASSUMED AVERAGE CHARACTERISTICS OF WASTES TO BE BURNED IN THE FFPI INCINERATOR

Component (wt. %)	High-Btu Liquid to Kiln/SCC	Drummed Solids to Kiln	Direct-burn Liquid to Kiln	Low-Btu Liquid to Kiln/SCC	Sludge to Kiln	Bulk Solids to Kiln
Carbon	37.16	1.92	7.79	4.93	36.98	17.03
Silicon	0.00	0.00	0.00	0.00	0.00	0.00
Hydrogen	9.20	0.13	0.00	1.16	5.08	3.18
Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00
Oxygen	49.03	0.00	0.00	6.19	0.00	0.00
Chlorine	4.61	0.95	92.21	1.71	2.93	1.80
Sulfur	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.00	5.00	0.00	86.00	30.00	19.60
Ash	0.00	92.00	0.00	0.00	25.00	58.40
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00
HHV, Btu/lb	7,791	343	432	1,024	7,903	1,591

<u>Containerized Solid Waste Feed</u>. The containerized solid waste used during the trial burn will include uncontaminated soil, or a commercially available sorbent such as "zorbal," in 55-gallon fiber or plastic drums to which chlorobenzene will be added as a POHC. The solid zorbal or soil will be spiked with a known amount of chlorobenzene per unit mass of zorbal or soil (by pouring a preweighed and documented amount of chlorobenzene into each drum) to yield an approximate POHC concentration of 3% in the solid material. Each drum will be weighed, analyzed, and tagged prior to the start of the trial burn test, and will be kept tightly sealed to avoid any loss of chlorobenzene. During the trial burn, the drums will be fed to the kiln through the containerized waste feed gate

<u>Bulk Solid Waste Feed</u>. The bulk solids used in the trial burn will be non-contaminated soils, having little or no organic content and, therefore, little or no heating value. These wastes will be staged in the solids staging bins and will be analyzed prior to the start of the test burn. They will be fed to the kiln through the kiln solids feed chute. During the trial burn test, they will be spiked with pre-weighed charges of hexachloroethane mixed with sawdust. The hexachloroethane/sawdust mixture will be introduced periodically into the bulk solids feeder at a rate that will result in approximately a 2% concentration of hexachloroethane in the bulk solids being introduced through this feed chute. The approximate resulting characteristics of this waste feed are shown in Table 1.3-1.

<u>Sludge Waste Feed</u>. The sludges used in the trial burn tests will be simulated sludge wastes consisting of a mixture of No. 2 fuel oil, water, and diatomaceous earth with the addition of 1,2,4-trichlorobenzene so that they will have approximately 5% concentration of this POHC. These wastes will be prepared (to the extent possible) and spiked with POHC to have approximately

those characteristics delineated in Table 1.3-1. They will be staged in a tank and analyzed prior to the trial burn tests.

Sludge samples will be collected for analysis from a tap located upstream of the sludge pump which feeds sludge from the sludge tank to the rotary kiln. Trichlorobenzene will be metered and mixed with the sludge upstream of the sludge pump. The pump will mix the POHC with the sludge before the sludge passes through the kiln sludge feed nozzle and the flow rate of trichlorobenzene will be metered using a calibrated flowmeter. The sludge POHC mixture will not be analyzed for trichlorobenzene; the composition of the sludge/POHC mixture will be calculated from the mass and volume flow rates of the individual components.

High-Btu, Low-Btu, and Direct Burn Liquid Waste Feeds. All high-Btu, low-Btu, and direct burn liquids fed to the kiln and SCC during the trial burn will be simulated wastes prepared from pure materials.

The high-Btu liquid will contain 5% by weight carbon tetrachloride in methanol and ethylene glycol to yield an analysis as shown in Table 1.3-1. The carbon tetrachloride will be pre-mixed into solution with the methanol and ethylene glycol prior to each run.

The low-Btu liquid will contain 2% by weight of tetrachloroethylene in a mixture of methanol, ethylene glycol and water corresponding to the analysis given in Table 1.3-1. Tetrachloroethylene will be pre-mixed into the methanol, ethylene glycol and water mixture prior to each run.

The direct burn waste will consist of 100% carbon tetrachloride. Table 1.3-1 presents the predicted ultimate analysis and heating value for the planned mixtures that will be used in the three trial burn tests.

1.3.2 Metals Content of Wastes to be Burned

Sludge waste feed to the kiln and low-Btu liquid waste feed to the SCC during trial burn test number two will be spiked with metal compounds or pure metals containing antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, as required, such that concentrations of these metals in the wastes used during the test will be at or near the maximum operating levels expected for the incinerator during actual operation[1]. Containerized solid waste feed to the kiln and high-Btu waste feed to the SCC during trial burn test number three will be spiked with the above-listed metals such that the metals feed rates to the incinerator are the same as for trial burn test number two[2]. The spray dryer makeup water used during both trial burn tests two and three will also be spiked with the above-listed metals, such that concentrations of these metals in the makeup water used during the test will be at or near the maximum operating levels expected for the inorganic waste treatment system during actual operation.

The feed rates of metals to the incinerator with the low-Btu and sludge wastes during trial burn test number two are shown in Tables 1.3.2-1 and 1.3.2-2, along with the total metals feed rates for the test. The metals feed rates to the incinerator with the high-Btu waste and containerized solid waste during trial burn test number three and total metals feed rates for the test are shown in Tables 1.3.2-3 and 1.3.2-4. The metals content of the filtrate feed to the spray dryer absorber is shown in Table 1.3.2-5 along with the

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[1] The metals concentrations in the low-Btu waste and sludge waste will be set such that 75 percent of the total metals feed to the incinerator will be contained in the low-Btu waste fed through the SCC.

[2] Note that high-Btu liquid waste will be fed to both the kiln and SCC during trial burn test number three. Only the high-Btu liquid waste fed to the SCC will be spiked with metals, such that 75 percent of the total metals feed to the incinerator during the test will be through the SCC.

TABLE 1.3.2-1

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN LOW-BTU LIQUID WASTE USED IN TRIAL BURN TEST TWO AND TOTAL METAL FEED RATES

	Concentration in Waste Feed	Metal Feed Rate (lb/hr) Low-Btu Waste	Total Feed
CARCINOGENIC METALS			
ARSENIC (As)	0.041%	1.245	1.66
BERYLLIUM (Be)	0.008%	0.2483	0.331
CADMIUM (Cd)	0.083%	2.483	3.31
CHROMIUM (Cr^{+6})	0.124%	3.724	4.965
NONCARCINOGENIC METALS			
ANTIMONY (Sb)	1.241%	37.2	49.6
BARIUM (Ba)	1.241%	37.2	49.6
LEAD (Pb)	0.579%	17.4	23.2
MERCURY (Hg)	0.207%	6.21	8.28
SILVER (Ag)	1.241%	37.2	49.6
THALLIUM (Tl)	0.414%	12.45	16.6

TABLE 1.3.2-2

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN SLUDGE WASTE USED IN TRIAL BURN TEST TWO AND TOTAL METAL FEED RATES

		Concentration in Waste Feed	Metal Feed Rate (lb/hr) Sludge Waste	Total Feed
CARCINOGENIC METALS				
ARSENIC	(As)	0.012%	0.415	1.66
BERYLLIUM	(Be)	0.002%	0.0827	0.331
CADMIUM	(Cd)	0.024%	0.8273	3.31
CHROMIUM	(Cr^{+6})	0.035%	1.241	4.965
NONCARCINOGENIC METALS				
ANTIMONY	(Sb)	0.355%	12.4	49.6
BARIUM	(Ba)	0.355%	12.4	49.6
LEAD	(Pb)	0.165%	5.8	23.2
MERCURY	(Hg)	0.059%	2.07	8.28
SILVER	(Ag)	0.355%	12.4	49.6
THALLIUM	(Tl)	0.118%	4.15	16.6

TABLE 1.3.2-3

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN CONTAINERIZED SOLID WASTE USED IN TRIAL BURN TEST THREE AND TOTAL METAL FEED RATES

		Concentration in Waste Feed	Metal Feed Rate (lb/hr) Solid Waste	Total Feed
CARCINOGENIC METALS				
ARSENIC	(As)	0,007%	0.415	1.66
BERYLLIUM	(Be)	0.001%	0.0827	0.331
CADMIUM	(Cd)	0.014%	0.8273	3.31
CHROMIUM	(Cr^{+6})	0.021%	1.241	4.965
NONCARCINOGENIC METALS				
ANTIMONY	(Sb)	0.207%	12.4	49.6
BARIUM	(Ba)	0.207%	12.4	49.6
LEAD	(Pb)	0.097%	5.8	23.2
MERCURY	(Hg)	0.034%	2.07	8.28
SILVER	(Ag)	0.207%	12.4	49.6
THALLIUM	(Tl)	0.069%	4.15	16.6

TABLE 1.3.2-4

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN HIGH-BTU LIQUID WASTE USED IN TRIAL BURN TEST THREE AND TOTAL METAL FEED

		Concentration in Waste Feed	Metal Feed Rate (lb/hr) High-Btu Waste	Total Feed
CARCINOGENIC METALS				
ARSENIC	(As)	0.062%	1.245	1.66
BERYLLIUM	(Be)	0.012%	0.2483	0.331
CADMIUM	(Cd)	0.124%	2.483	3.31
CHROMIUM	(Cr^{+6})	0.186%	3.724	4.965
NONCARCINOGENIC METALS				
ANTIMONY	(Sb)	1.862%	37.2	49.6
BARIUM	(Ba)	1.862%	37.2	49.6
LEAD	(Pb)	0.869%	17.4	23.2
MERCURY	(Hg)	0.310%	6.21	8.28
SILVER	(Ag)	1.862%	37.2	49.6
THALLIUM	(Tl)	0.621%	12.45	16.6

TABLE 1.3.2-5

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN SPRAY DRYER MAKEUP WATER USED IN TRIAL BURN TESTS TWO AND THREE

		Concentration in Makeup Water	Metal Feed Rate to SDA with Filtrate (lb/hr)
CARCINOGENIC METALS			
ARSENIC	(As)	4.0 mg/l	0.220
BERYLLIUM	(Be)	0.005 mg/l	0.000276
CADMIUM	(Cd)	0.05 mg/l	0.00276
CHROMIUM	(Cr^{+6})	0.20 mg/l	0.0110
NONCARCINOGENIC METALS			
ANTIMONY	(Sb)	5.0 mg/l	0.276
BARIUM	(Ba)	5.0 mg/l	0.276
LEAD	(Pb)	5.0 mg/l	0.276
MERCURY	(Hg)	3.0 ug/l	0.000165
SILVER	(Ag)	0.10 mg/l	0.00551
THALLIUM	(Tl)	0.10 mg/l	0.00551

total metals feed rates to the spray dryer from the filtrate. The metals contents of the wastes fed to the incinerator during trial burn tests number two and three were determined from waste analysis and metals emissions data from the Kommunekemi facility in Denmark and from commercial hazardous waste incinerators in the U.S. The feed rate of metals in the spray dryer makeup water was determined from the expected maximum concentration of metals in the inorganic waste treatment system filtrate during actual operation.

1.3.3 Pre-Trial Burn Determination of Incinerator Metals Removal Efficiency and Partition Coefficients

FFPI believes that the assumed control efficiency of 95 percent for arsenic, cadmium, antimony, lead, and thallium included in the Draft Emission Standards for Emissions of Metals and Hydrogen Chloride from Hazardous Waste Incinerators March, 1989 for the spray dryer absorber/fabric filter system underestimates the actual expected control efficiency of the FFPI incinerator and air pollution control system. This is in part because the assumed control efficiency takes no credit for metals removed in the kiln ash, and also based on operating experience from the Nyborg, Denmark, incinerator with a similar air pollution control system. It is expected that the incinerator and air pollution control system will be capable of achieving a minimum control efficiency of 98 percent for the above-listed metals. FFPI is therefore proposing to demonstrate through pre-trial burn operation and through an additional trial burn test that increasing the feed rates of the above-listed metals to those corresponding to 98 percent removal efficiency will not appreciably increase the emissions of these metals over those previously calculated based on the assumed 95 percent efficiency.

The maximum feed rates of carcinogenic metals to the incinerator included in Tables 1.3.2-1 through 1.3.2-4 are limited by Tier III emission limits calculated based on the assumed control efficiency of the spray dryer/fabric filter system of 95 percent. The maximum feed rate of lead to the incinerator based on an assumed 95 percent control efficiency is limited by provisions of the Clean Air Act. It is expected that metal-containing wastes received by FFPI will contain higher metals contents than those to which the incinerator would be limited based on the assumed efficiency. Therefore, metal-containing wastes would need to be blended with low-metal concentration wastes in order to meet the calculated hourly design feed rates at the assumed efficiency. Design feed rates proposed as permit conditions have been modified from expected hourly metals feed rates based on Tier III and Clean Air Act limitations.

Tests will be conducted during the 720-hour pre-trial burn period to determine the actual removal efficiencies of the total incinerator system for carcinogenic and non-carcinogenic metals. Sampling and analysis methods used for these tests will be the same as those methods to be used during the trial burn. It is expected that the actual removal efficiencies for metals will be significantly higher than those assumed for the purposes of designing trial burn tests two and three. If higher removal efficiencies are demonstrated during the pre-trial burn test period, an additional test will be conducted during the trial burn.

The tentative additional test, here referred to as trial burn test number four, will have test conditions identical to those of trial burn test number two, with the exception that the metals feed rates and waste feed compositions will be as listed in Tables 1.3.3-1 and 1.3.3-2. Sludge waste feed to the kiln and and low-BTU liquid waste feed to the SCC during trial

TABLE 1.3.3-1

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN SLUDGE WASTE USED IN TRIAL BURN TEST FOUR AND TOTAL METAL FEED RATES

		Concentration in Waste Feed	Metal Feed Rate (lb/hr) Sludge Waste	Total Feed
CARCINOGENIC METALS				
ARSENIC	(As)	0.024%	0.828	3.31
BERYLLIUM	(Be)	0.002%	0.0828	0.331
CADMIUM	(Cd)	0.035%	1.24	4.96
CHROMIUM	(Cr^{+6})	0.047%	1.655	6.62
NONCARCINOGENIC METALS				
ANTIMONY	(Sb)	0.355%	12.4	49.6
BARIUM	(Ba)	0.355%	12.4	49.6
LEAD	(Pb)	0.414%	14.48	57.9
MERCURY	(Hg)	0.059%	2.07	8.28
SILVER	(Ag)	0.355%	12.4	49.6
THALLIUM	(Tl)	0.118%	4.15	16.6

TABLE 1.3.3-2

APPROXIMATE FEED RATES AND CONCENTRATIONS OF METALS IN LOW-BTU LIQUID WASTE USED IN TRIAL BURN TEST FOUR AND TOTAL METAL FEED RATES

	Concentration in Waste Feed	Metal Feed Rate (lb/hr) Low-Btu Waste	Total Feed
CARCINOGENIC METALS			
ARSENIC (As)	0.083%	2.48	3.31
BERYLLIUM (Be)	0.008%	0.248	0.331
CADMIUM (Cd)	0.124%	3.72	4.96
CHROMIUM (Cr^{+6})	0.166%	4.965	6.62
NONCARCINOGENIC METALS			
ANTIMONY (Sb)	1.241%	37.2	49.6
BARIUM (Ba)	1.241%	37.2	49.6
LEAD (Pb)	1.448%	43.42	57.9
MERCURY (Hg)	0.207%	6.21	8.28
SILVER (Ag)	1.241%	37.2	49.6
THALLIUM (Tl)	0.414%	12.45	16.6

burn test number four will be spiked with metal compounds (or pure metals) containing antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, as required, such that concentrations of these metals in the wastes used during the test will be at or near the maximum operating levels expected for the incinerator during actual operation.

The spray dryer makeup water used during trial burn test four will also be spiked with the above-listed metals, such that concentrations of these metals in the makeup water used during the test will be at or near the maximum operating levels expected for the inorganic waste treatment system during actual operation. The metals content of the filtrate feed to the spray dryer absorber is shown in Table 1.3.2-5 along with the total metals feed rates to the spray dryer from the filtrate. The feed rate of metals in the spray dryer makeup water was determined from the expected maximum concentration of metals in the inorganic waste treatment system filtrate during actual operation.

The metals contents of the wastes fed to the incinerator during trial burn test four were determined from waste analysis and metals emissions data from the Kommunekemi facility in Denmark and from commercial hazardous waste incinerators in the U.S. Note that the preliminary design feed rates of lead and carcinogenic metals to the incinerator at the assumed lower removalefficiency would have exceeded regulatory requirements for these metals, and were therefore reduced to the levels shown in Tables 1.3.2-1 through 1.3.2-4. Feed rates for these metals closer to the preliminary design rates have been specified for trial burn test four.

Trial burn test number four is designed to demonstrate the capability of the incinerator to accept liquid and sludge wastes containing metals, and to use filtrate from the inorganic waste treatment system containing metals without exceeding EPA guldelines for metals emissions from incinerators or

Clean Air Act Limitations. The test is therefore designed for the maximum expected feed rates of each metal to the incinerator and spray dryer during actual operation.

FFPI will also determine the metals partition coefficients in the air pollution control system during the pre-trial burn test period. It has been estimated that the major portion of certain metals, particularly chromium, will be released from incinerators with the rotary kiln bottom ash, rather than through the air pollution control system and stack. EPA estimates of metals partitioning are contained in Table III-9 of the EPA Guidance on Metals and Hydrogen Chloride Controls for Hazardous Waste Incinerators, March, 1989. FFPI has assumed for the purposes of metals emissions calculations and designing trial burn conditions that 100 percent of all metals fed to the incinerator are released to the air pollution control system, and that none are released with the kiln ash. If FFPI determines through pre-trial burn testing that a significant percentage of metals are released with the kiln ash, revised trial burn conditions may be submitted to FDER to allow testing of the incinerator at higher feed rates of those metals.

1.4 TRIAL BURN TEST PARAMETERS

The parameters which will be used in the various trial burn tests are elaborated below.

1.4.1 Summary of Test Conditions

The trial burn test conditions have been designed to allow for possible changes in waste characteristics and operating scenarios in the future. The trial burn waste feed compositions will attempt to introduce the highest possible volume of organic chlorine, metals, and ash as well as the least-incinerable POHCs anticipated in the future. Operating conditions have been selected to present a worst-case scenario, as far as the performance standards are concerned, in order to achieve maximum operating envelope for the permit.

Three trial burn tests have been selected to demonstrate a wide range of incinerator facility capabilities and operating limits. These detailed test protocols include variations in waste feed types, compositions, and rates; combustion gas velocities and temperatures; use of auxiliary fuel; and other parameters that may affect the organic compound destruction and removal efficiency and the metals removal efficiency of the incineration facility. The planned test conditions of these three trial burn tests are summarized in Table 1.4.1-1.

The planned test protocols are based on detailed material and energy balances. Independent parameters that can be controlled are waste feed types, feed rates, feed composition, auxiliary fuel rate, and excess air (or combustion air flow rate), in both the rotary kiln and the SCC. Dependent variables include combustion gas flow rates (or gas residence time), residual O_2 levels, operating temperatures, and flue gas composition. Since the simultaneous achievement of a specific set of operating conditions, such as temperature, residence time, residual O_2 levels, and waste feed rates requires very specific feed compositions and heating values, several of the waste feeds planned for this program are artificial mixtures that simulate the worst-case examples expected during the burning of actual wastes during full-scale operation of the incinerator.

TABLE 1.4.1-1

TRIAL BURN TEST CONDITIONS

TRIAL BURN FEED STREAMS
MASS FEED RATES - LB/HR

Stream Name	Test 1		Test 2		Test 3	
	Kiln	SCC	Kiln	SCC	Kiln	SCC
High-Btu Liquid (POHC - CCl_4)	0	0	5,500	0	3,800	2,000
Low-Btu Liquid (POHC - C_2Cl_4)	0	0	0	3,000	1,000	0
Direct Burn Liquid (POHC - CCl_4)	0	0	800	0	0	0
Containerized Waste (POHC - C_6H_5Cl)	0	0	2,500	0	6,000	0
Sludge (POHC - $C_6H_3Cl_3$)	0	0	3,500	0	2,000	0
Bulk Solids (POHC - C_2Cl_6)	10,400	0	0	0	1,750	0
Total	10,400	0	12,300	3,000	14,550	2,000

TABLE 1.4.1-1 (CONTINUED)

TRIAL BURN TEST CONDITIONS

SUMMARY OF TRIAL BURN INCINERATOR ESTIMATED OPERATING CONDITIONS

Operating Parameter	Test 1			Test 2			Test 3		
Outlet Temperature, °F									
Rotary Kiln		1,440			2,200			1,600	
SCC		1,800			1,850			1,850	
Exit Volume									
SCC, acfm		126,200			115,300			117,100	
Stack, acfm		68,555			63,465			65,005	
Stack, scfm		43,875			41,898			41,603	
Residence Time, Sec.									
SCC		2.33			2.55			2.51	
Flue Gas O_2 Content									
SCC Exit		6.85			8.98			8.94	
Heat Input, MM Btu/hr	Waste	Aux. Fuel	Total	Waste	Aux. Fuel	Total	Waste	Aux. Fuel	Total
Rotary Kiln	16.56	29.94	46.50	71.72	0	71.72	51.29	0	51.29
SCC	0	28.32	28.32	3.07	0	3.07	15.58	7.25	22.83
Total	16.56	58.26	74.82	74.79	0	74.79	66.87	7.25	74.12
Ash loading, lb/hr		6,074			2,858			6,338	
HCl loading, lb/hr		192			1,202			444	
Total liquid feeds, lb/hr		0			9,300			4,800	
Total solid feeds, lb/hr		10,400			6,000			9,750	
Auxiliary fuel feed, lb/hr		3,067			0			382	

TABLE 1.4.1-1 (CONTINUED)
TRIAL BURN TEST CONDITIONS
SUMMARY OF ROTARY KILN ESTIMATED OPERATING CONDITIONS

Operating Parameter	Test 1	Test 2	Test 3
High-Btu Liquid			
Heating Value, Btu/lb	0	7,791	7,791
Feed rate, lb/hr	0	5,500	3,800
Heat Input, MM Btu/hr	0	42.85	29.61
Containerized Wastes			
Heating Value, Btu/lb	0	344	344
Feed rate, lb/hr	0	2,500	6,000
Heat Input, MM Btu/hr	0	0.86	2.06
Bulk Solid			
Heating Value, Btu/lb	1,592	0	1,592
Feed rate, lb/hr	10,400	0	1,750
Heat Input, MM Btu/hr	16.56	0	2.79
Low-Btu Liquid			
Heating Value, Btu/lb	0	0	1,024
Feed rate, lb/hr	0	0	1,000
Heat Input, MM Btu/hr	0	0	1.02
Sludge			
Heating Value, Btu/lb	0	7,904	7,904
Feed rate, lb/hr	0	3,500	2,000
Heat Input, MM Btu/hr	0	27.66	15.81
Direct Burn Liquid			
Heating Valve, Btu/lb	0	432	0
Feed rate, lb/hr	0	800	0
Heat Input, MM Btu/hr	0	0.35	0
Total Waste Feed Rate, lb/hr	10,400	12,300	14,550
Average Higher Heating Value, Btu/lb	0	5,831	3,525
Total Waste Heat Input, MM Btu/hr	16.56	71.72	51.29
Auxiliary Fuel Heat Input, MM Btu/hr	29.94	0	0
Excess Air, %	40	75	94
Output Temperature, °F	1,440	2,200	1,600

TABLE 1.4.1-1 (CONTINUED)

TRIAL BURN OPERATING CONDITIONS

SUMMARY OF SCC ESTIMATED OPERATING CONDITIONS

Operating Parameter	Test 1	Test 2	Test 3
High-Btu Liquid Waste			
Heating Value, Btu/lb	0	7,791	7,791
Feed rate, lb/hr	0	0	2,000
Heat Input, MM Btu/hr	0	0	15.58
Low-Btu Liquid Waste			
Heating Value, Btu/lb	0	1,024	0
Feed rate, lb/hr	0	3,000	0
Heat Input, MM Btu/hr	0	3.07	0
Aux Fuel Heat Input, MM Btu/hr	28.32	0	7.25
Total System Heat Input, MM Btu/hr	74.82	74.79	74.12
Exit Gas O_2, dry % (vol)	6.85	8.98	8.94
Exit Temperature, °F	1,800	1,850	1,850
SCC Gas Residence Time, sec.	2.33	2.55	2.51
SCC Exhaust Gas Flow, acfm	126,200	115,300	117,100
Stack Gas Flow, acfm	68,555	63,465	65,005
Stack Gas Flow, scfm at 68°F	43,875	39,423	40,380
HCl loading to APC, lb/hr	192	1,202	444

1.4.2 Trial Burn Test One

Trial burn test one is designed to demonstrate the following:

- Minimum operating temperature (1,440°F) in kiln;
- Minimum operating temperature (1,800°F) in SCC;
- Maximum combustion gas flow of 68,555 acfm; i.e., minimum SCC residence time (2.33 seconds);
- Maximum heat release, 75 MM Btu/hr, as combined input to both the rotary kiln and the SCC;
- Maximum solids feed rate of 10,400 lb/hr; and
- Minimum solids retention time in the kiln; i.e., maximum kiln speed.

In this test, non-contaminated bulk soils spiked with approximately 2% of hexachloroethane will be fed by the kiln solids feed conveyor to the kiln at the maximum feed rate of 10,400 lbs/hr. Near minimum kiln combustion gas outlet temperatures of approximately 1,440°F and minimum SCC combustion gas outlet temperatures of 1,800°F will be maintained. Auxiliary fuel will be used to provide the necessary thermal input to the kiln and the SCC to maintain these temperatures. These and the other operating conditions of this test are summarized in Table 1.4.1-1.

This test is primarily intended to demonstrate the ability of the incinerator to achieve 99.99% or greater DREs when burning a semivolatile POHC at the minimum kiln temperature of 1,440°F, the minimum SCC temperature of 1,800°F, and the minimum SCC gas residence time. This test is also intended to demonstrate the development of the maximum thermal capacity of the incinerator, the ability of the kiln to physically handle the maximum feed rate of bulk solids that will be fed to the incinerator, and the minimum solids retention time in the kiln. The test will also show that the air pollution control system is able to handle the heavy particulate loading that likely would be generated by such a feed scenario. Non-contaminated soils having little or no heating value and very high ash content have been selected for this test because they can be fed at the maximum bulk solids feed rate without being constrained by the thermal capacity of the kiln.

1.4.3 Trial Burn Test Two

Trial Burn Test Two is designed to demonstrate the following:

- Operation of the kiln and SCC with various waste types and non-continuous feed;
- Maximum HCl loading of 1,202 lb/hr to the APC train;
- Maximum heat release of 75 MM Btu/hr to the kiln and SCC;
- Operation of SCC with only low-Btu waste feed;
- Maximum emission rates of metals from the incinerator; and
- Determination of PCDD/PCDF emissions.

In this test, four types of wastes will be simultaneously fed to the kiln to develop nearly the full thermal capacity of the kiln (72 MM Btu/hr), and low-Btu liquids will be supplied to the SCC burners to develop the full thermal capacity of the total system (75 MM Btu/hr). The kiln waste feeds will consist of 2,500 lb/hr of containerized wastes fed through the container handling system, 800 lbs/hr of organic liquids fed through the direct-burn nozzle, 3,500 lbs/hr of sludge fed through the sludge nozzle, and 5,500 lbs/hr of high-Btu liquids fed through the high-Btu nozzle. The SCC feed will consist of 3,000 lb/hr of low-Btu liquids.

No auxiliary fuel will be burned in the kiln burner or the SCC burners during this test. A maximum combustion gas temperature of 2,200°F will be maintained at the outlet of kiln and the minimum stack gas flow rate of 63,465 acfm will be generated. The containerized waste will be spiked with approximately 3% chlorobenzene and the sludge feed will be spiked with approximately 5% of 1,2,4-trichlorobenzene. The low-Btu organic liquid feed will be composed of 2% tetrachloroethylene in a mixture of ethylene glycol, water, and methanol, and the high-Btu liquid feed will be composed of 5% carbon tetrachloride in methanol and ethylene glycol. The waste feeds and other operating conditions of this test are summarized in Table 1.4.1-1.

This test is designed to demonstrate several features of the incinerator. First, it will demonstrate the ability of the kiln to physically handle and achieve a DRE of 99.99% or greater while burning a combination of simultaneously fed wastes including a non-continuous, batch-type injection of containerized wastes into the kiln. During full-scale operation, a myriad number of other combinations of waste types and feed rates will be employed, but none will stress the incinerator any more than the conditions proposed for this test. Second, this test will demonstrate the development of nearly the full thermal capacity of the kiln and SCC, the full thermal capacity of the total system, and the feeding of low-Btu waste to the SCC. Third, it will demonstrate the feeding of the maximum amount of organic chlorine to the system. Finally, this test will demonstrate the ability of the incinerator to achieve 99.99% or greater DREs for four different POHCs.

Additionally, this test will be used to address two other environmental concerns: potential air emissions of polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), and emissions of metals. The concentrations of PCDDs and PCDFs in the stack gas, kiln ash, and air pollution control system residues will be measured to demonstrate that the incinerator will not generate significant amounts of these compounds.

The low-Btu liquid waste feed to the SCC and sludge feed to the kiln will be spiked with metals, as required, such that the maximum feed rates of metals in Tables 1.3.2-1 and 1.3.2-2 are achieved. The concentrations of the metals listed in the draft standards for metal emissions from hazardous waste incinerators will be measured in the waste feeds and stack gas emissions to determine the maximum emission rates of metals and control efficiency of the incinerator air pollution control system for metals.

1.4.4 Trial Burn Test Three

Trial Burn Test Three is designed to demonstrate the following:

- Maximum waste feed loading, 16,550 lb/hr to the kiln and SCC, of the three trial burn tests;
- Maximum emission rates of metals from the incinerator; and
- Maximum containerized waste feed rate of the equivalent of 12 55-gallon drums/hr or 6,000 lb/hr.

In this test, five types of wastes will be simultaneously fed to the kiln and high-Btu liquids will be supplied to the SCC burners to develop the full thermal capacity of the total system. The kiln waste feeds will consist of 3,800 lbs/hr of high-Btu organic liquids fed through the high-Btu liquid nozzle, 2,000 lbs/hr of sludge fed through the sludge nozzle, 1,000 lbs/hr of low-Btu wastes fed through the low-Btu nozzle, 6,000 lb/hr of containerized solids, and 1,750 lb/hr of bulk solids.

No auxiliary fuel will be burned in the kiln burner during the test. The SCC burners will burn 382 lb/hr of auxiliary fuel and 2,000 lb/hr of high-Btu liquids. Combustion gas temperatures of 1,600°F and 1,800°F will be maintained at the outlet of kiln and SCC, respectively, and a stack gas flow rate of 65,005 acfm will be generated. The feeds will be spiked with POHCs as for Trial Burn Test Two.

This test will demonstrate the ability of the kiln to handle and burn a combination of simultaneously fed wastes, the operation of the incinerator at the maximum waste feed rate, and the achievement of DREs of 99.99% or greater for five different POHCs. Emissions of metals will also be determined during this test.

The high-Btu liquid waste feed to the SCC and containerized waste feed to the kiln will be spiked with metals, as required, such that the maximum feed rates of metals in Tables 1.3.2-3 and 1.3.2-4 are achieved. The concentrations of metals will be measured in the waste feeds and stack gas emissions to determine the maximum emission rates and control efficiencies for metals.

1.4.5 Number and Duration of Tests

Three trial burn tests are planned during the trial burn, as discussed in detail in Sections 1.4.2, 1.4.3, and 1.4.4. Three replicated runs are planned for each test. Each run will involve sampling, data gathering, analysis and review for performance within the objectives of each test. The three replicate runs for each test will help to address possible system variability under invariant operating constraints.

The schedule for the trial burn is summarized by day in Tables 1.4.5-1 through 1.4.5-3. The first two days of the trial burn are reserved for incinerator warm-up, set up of sampling equipment and instrumentation and determination of stack velocity profiles. The three tests will be performed over the remaining 9 days as shown in the schedule.

The amount of waste fed to the kiln and SCC during each of the three trial burn tests is summarized in Table 1.4.5-4 for each waste feed. The amount of waste required for each test was calculated based on the nominal mass feed rate of the stream, the density of the stream (if needed) and a 16-

hour feed duration. This duration is four hours longer than the planned test time of 12 hours in order to provide spare feed as a contingency.

1.4.6 Additional Trial Burn Test for Demonstration of Metals Removal Efficiency and Partition Coefficients

A tentatively-scheduled additional trial burn test, here referred to as trial burn test number four, will have test conditions identical to those of trial burn test number two, with the exception that the metals feed rates and waste feed compositions will be as listed in Tables 1.3.3-1 and 1.3.3-2 of Section 1.3.3 above. The test schedule for the tentative trial burn test four will be the same as for trial burn test two, and the amount of surrogate waste materials used during the test will also be the same as trial burn test two.

As discussed in Section 1.3.3 above, sludge waste feed to the kiln and and low-BTU liquid waste feed to the SCC during trial burn test number four will be spiked with metal compounds (or pure metals), as required, such that concentrations of these metals in the wastes used during the test will be at or near the maximum operating levels expected for the incinerator during actual operation. The spray dryer makeup water used during trial burn test four will also be spiked with the metals, such that metals concentrations in the makeup water used during the test will be at or near the maximum operating levels expected for the inorganic waste treatment system.

1.4.7 Air Pollution Control System Operating Conditions

The average operating conditions of the air pollution control system during the trial burn tests are delineated in Table 1.4.7-1.

TABLE 1.4.5-1

TRIAL BURN SCHEDULE - TRIAL BURN TEST 1

Day Number	Test	Run	Activity
1	-	-	Incinerator warm-up with auxiliary fuel
2	-	-	Set up sampling equipment
3	1	-	1/2 hour startup with test feed
		1-1	Run 1-1 (3 hours plus 1 hour for instrumentation re-preparation for next test)
		1-2	Run 1-2 (3 hours plus 1 hour for instrumentation re-preparation for next test)
			After completion of the second run, incinerator fired on auxiliary fuel in preparation for next test
4	-	-	1/2 hour startup with test feed
	1	1-3	Run 1-3 (3 hours)
		-	After completion of the third run, incinerator fired on auxiliary fuel in preparation for next test
	1	-	Initiate data recovery for Test 1
5	1	-	Complete data recovery for Test 1; instrument and feed preparation for Test 2

TABLE 1.4.5-2

TRIAL BURN SCHEDULE - TRIAL BURN TEST 2

Day Number	Test	Run	Activity
6	2	-	1/2 hour startup with test feed
		2-1	Run 2-1 (3 hours plus 1 hour for instrumentation re-preparation for next test)
		2-2	Run 2-2 (3 hours plus 1 hour for instrumentation re-preparation for next test)
			After completion of the second run, incinerator fired on auxiliary fuel in preparation for next test
7	-	-	1/2 hour startup with test feed
	2	2-3	Run 2-3 (3 hours)
		-	After completion of the third run, incinerator fired on auxiliary fuel in preparation for next test
	2	-	Initiate data recovery for Test 2
8	2	-	Complete data recovery for Test 2; instrument and feed preparation for Test 3

TABLE 1.4.5-3

TRIAL BURN SCHEDULE - TRIAL BURN TEST 3

Day Number	Test	Run	Activity
9	3	-	1/2 hour startup with test feed
		3-1	Run 3-1 (3 hours plus 1 hour for instrumentation re-preparation for next test)
		3-2	Run 3-2 (3 hours plus 1 hour for instrumentation re-preparation for next test)
			After completion of the second run, incinerator fired on auxiliary fuel in preparation for next test
10	-	-	1/2 hour startup with test feed
	3	3-3	Run 3-3 (3 hours)
		-	After completion of the third run, incinerator fired on auxiliary fuel in preparation for next test
	3	-	Initiate data recovery for Test 3
11	3	-	Complete data recovery for Test 3; pack sampling equipment, instrumentation, and samples

TABLE 1.4.5-4

TRIAL BURN WASTE FEED REQUIREMENTS

Waste Type	Test 1	Test 2	Test 3	Total (All Tests)
Low-Btu Waste	0 gal	5,130 gal	1,715 gal	6,845 gal
High-Btu Waste	0 gal	8,750 gal	9,230 gal	17,980 gal
Direct-burn Liquid	0 gal	890 gal	0 gal	890 gal
Containerized Solids* (55 gal drums)	0 drums	160 drums	384 drums	544 drums
Pumpable Sludge	0 gal	6,390 gal	3,650 gal	10,040 gal
Bulk Solids	166,400 lb	0 lb	28,000 lb	194,400 lb

* Based on 250 lb/drum @ ~ 60 lb/ft^3

TABLE 1.4.7-1

AIR POLLUTION CONTROL SYSTEM OPERATING CONDITIONS FOR TRIAL BURN TESTS

Operating Parameter	Test 1	Test 2	Test 3
Spray Dryer Absorber			
Inlet Gas Flow, scfm	29,484	26,354	26,766
Inlet Gas Flow, acfm	126,200	115,300	117,100
Inlet Gas Temperature, °F	1,800	1,850	1,850
Lime Slurry Flow, gpm	87	118	121
Pressure Drop "H_2O	1.0	1.0	1.0
Liquid to Gas Ratio, gal/1,000 scfm	3.25	4.99	5.01
Lime Surry pH	> 10	> 10	> 10
Fabric Filter			
Inlet Gas Flow, acfm	65,695	60,571	62,116
Inlet Gas Temperature, °F	375	400	400
Pressure Drop "H_2O	4-12	4-12	4-12

1.4.8 Interlock Control and Emergency Shutdown Control Systems

The following procedures will ensure that the system operation can be stopped in an orderly controlled manner as required, and ensures that the systemwill shut down automatically if operating conditions fall outside minimum or maximum setpoints.

Waste Feed Cutoff. If incinerator operating conditions deviate from acceptable ranges, the automatic interlock system will interrupt waste feeds by either closing automatic block valves in the feed lines, or stopping the bulk and containerized solids feed. This situation will be called to the operator's attention by audible and visible alarms. The operator's actions following such an event will be as follows:

1. Continue operation of an SCC burner on auxiliary fuel to maintain compliance temperatures. One burner will have remained on with auxiliary fuel during the waste feed cutoff.
2. Continue or start operation of the kiln burner on auxiliary fuel to maintain compliance temperatures.
3. Locate and correct cause of problem.
4. Return system to permissible operating conditions. Ensure that all interlocks for waste feed have cleared.
5. Restart waste feeds per standard hot startup instructions in Operations Manual. The first two steps will ensure complete combustion of any residual organics after waste feed cutoff.

An interlock-initiated waste feed cutoff will normally result in no excess emissions. In some cases, when the CO or HCl emissions monitor has initiated the cutoff, a small amount of CO or HCl above normal levels may be emitted during the waste-feed cutoff, but this amount is usually small and of limited duration. It would consist of the increment above the level that caused the cutoff, for the few seconds that it would take for the gases to clear the system.

Emergency Shutdown. If at any time the operations or maintenance personnel detect a severe abnormal operating condition or a condition of imminent damage to the equipment or impermissible emissions, a total system shutdown may be initiated by depressing the master "STOP" button on the control panel or depressing the ID fan "STOP" button in the field. As previously described, a complete shutdown will also be automatically initiated in case of a control or electric power failure, an ID fan failure, rotary atomizer failure, or high outlet SDA temperature.

An emergency shutdown can result in damage to the equipment; therefore, it will be avoided whenever possible by a feed cutoff or a controlled shutdown. An emergency shutdown will immediately stop all waste feeds, the combustion air and ID fans, and the SCC will be immediately switched to auxiliary fuel. The kiln drive, the SCC burner, the SDA, and the ash conveyor will continue to operate on either primary or emergency power and the backup ID fan will startup automatically. The ambient air inlet duct between the SCC and SDA will open and the hot gas in the SCC will thereby be cooled and will vent to the atmosphere through the SDA and fabric filter. Stack emissions during emergency shutdown will be no greater than emissions during normal incinerator operation.

1.4.9 Incinerator Operating Procedures

Before the initiation of the trial burn tests, the incinerator will be brought to operating conditions using auxiliary fuel. Either the cold startup or hot startup procedures described in Section 9.0 of this Trial Burn Plan will be used, as appropriate, to accomplish this. At the end of each day's tests, the incinerator will be turned down to standby conditions and operated at these conditions on auxiliary fuel until it is brought back to normal operating conditions (on auxiliary fuel) for the next day's tests. The normal shutdown and hot startup procedures described in Section 9.0 will be used for these purposes. At the end of the tests, the incinerator either will be turned down to standby conditions or will be shut down using the normal shutdown procedures described in Section 9.0.

1.4.10 Reporting of Trial Burn Test Results

Data Reporting. All data will be reported in standard units depending on the measurement and the ultimate use of the data. The bulk of the data will be computer processed and reported as in Table 1.4.10-1. This data will be used to calculate the DRE for POHCs and removal efficiencies and maximum allowable feed rates for metals, and will be organized into a comprehensive draft final report.

TABLE 1.4.10-1

REPORTING OF TRIAL BURN TEST RESULTS

- Particulate and metal emissions
  - ng/J heat input
  - gr/scf actual
  - gr/scf at 7% O_2
  - gr/scf at 50% excess air
  - gr/acf
  - lb/MM Btu heat input
  - lb/hr

- Metal and chlorine feed rates
  - lb/hr

- HCl emissions
  - ng/m^3 actual
  - ppm actual
  - lb/hr

- Organic emissions
  - ng/m^3 actual
  - ppm actual
  - lb/hr

- Volumetric flow rate
  - m^3/s dry basis, standard conditions (68°F)
  - ft^3/min dry basis, standard conditions (68°F)
  - m^3/s actual
  - ft^3/min actual

- Gas analyses for each test run
  - CO_2, to nearest 0.1% CO_2
  - O_2, to nearest 0.1% O_2
  - CO, to nearest 1.0 ppm CO
  - N_2, to nearest 0.1% N_2 (calculated)
  - dry molecular weight, to nearest 0.1 gram
  - THC to nearest 1.0 ppm

- Liquid grab samples
  - micrograms per unit volume (mg/l)

- Solid grab samples
  - weight per unit weight (gm/gm)

2.0 SAMPLING, MONITORING, AND ANALYSIS PROTOCOL

2.1 INTRODUCTION

This section presents the sampling, analysis, data reduction with quality control and monitoring procedures to be utilized during the trial burn of the incinerator. The testing program will determine the DRE for each of the three volatile and two semivolatile POHCs and the removal efficiencies and maximum emissions of hydrochloric acid and metals, as well as emissions data for other pollutants as specified.

Individual and composite samples will be collected from the waste feed steams, selected process streams, and flue gas during each of the three trial burns to be conducted at the facility. The specific sampling and monitoring locations, equipment, and frequencies are presented in Sections 2.2 through 2.5. Sections 3.0 and 4.0 describe the sampling and analytical procedures in detail.

2.2 SAMPLING AND MONITORING LOCATIONS

Drawing 8813-00-F-017 of Appendix D-5 indicates the sampling points for each stream which will be sampled during the trial burn. The locations of the process monitoring sensors or sample points are also indicated in Drawing F-017.

The 5'6"-diameter stack is 200' in height with two sets of sampling ports located at two different heights. The first set of four ports, which are at right angles to each other, is located 10 diameters (approximately 55') above the combustion gas inlet. A second set of four ports is located 1' above the first set of four ports. This second set of ports is offset 45° with respect to the first set of ports; therefore, ports are not directly above each other. These two sets of four ports are needed for the Modified Method 5 (MM5) sampling trains, the Method 12 lead sampling train, the Method 101A mercury sampling train, Method 104 beryllium sampling train, the Method 108 arsenic sampling train, the VOST train, integrated gas bag sampling, and the velocity and temperature profile determination.

The sampling tap for the sludge waste will be located upstream of the trichlorobenzene injection location. Samples of each of the liquid wastes will be obtained from sample taps located in the line connecting each liquid waste holding tank to the burners or nozzles.

2.3 SAMPLING AND ANALYSIS PROTOCOL

During each of the test runs (see Subsections 1.4.2 through 1.4.5), samples will be collected of each waste feed, burner fuel, stack gases, kiln ash, dried solids from the air pollution control system, and lime slurry and makeup water fed to the spray dryer absorber. Table 2.3-1 lists these samples together with their sampling locations, frequencies, sample sizes and analytical methods for sampling and sample preparation.

The exhaust gas stream will be sampled for the designated set of POHCs: carbon tetrachloride (CCl_4), chlorobenzene (C_6H_5Cl), tetrachloroethylene (C_2Cl_4), 1,2,4-trichlorobenzene ($C_6H_3Cl_3$) and hexochloroethane (C_2Cl_6) as well as other volatile and semivolatile organic compounds, hydrochloric acid (HCl), particulates, and the designated set of metals, using three EPA Modified Method 5 (MM5) sampling trains, four metals sampling trains, and/or other sampling methods as approved by EPA and FDER. Grab samples will be collected from 12 process streams throughout the trial burn test program. Table 2.3-1 summarizes the process samples to be collected during the entire program of three trial burn tests with three runs per trial burn test. Process

TABLE 2.3-1

PROCESS STREAMS SAMPLING AND ANALYSIS SCHEME FOR 3 TRIAL BURN TESTS WITH 3 RUNS PER TEST

Sample Type	Sample Location [1]	Sample Code [3]	Trial Burn Tests	Frequency of Sampling for Each Run	Analysis [2]	Method
Bulk Solids Feed	1	(BSF)	1,3	One 1/2 pint grab sample every 30 minutes composited into one sample	POHCs, Metals, Total Organic Halide, Methods, Viscosity SW-846 Density, Ash, Heating Value Elemental Analysis	ASTM Methods
Containerized Waste	2	(CWF)	2,3	Sample before feed preparation	Ash, Ultimate Analysis, Metals.	ASTM Methods, SW-846
Fuel Oil	3	(FOF)	1,3	One 1/2 pint grab sample every 30 minutes composited into one sample	Total Organic Halide, Viscosity, Ash, Heating Value, Elemental Analysis	GC Method A-0041 ASTM D-512-81 ASTM Procedures
High-Btu Liquid Feed	4	(HBF)	2,3	One 1/2 pint grab sample every 30 minutes composited into one sample (4)	POHCs, Metals, Total Organic Halide, Viscosity, Density, Ash, Heating Value, Elemental Analysis.	GC Method A-004/ ASTM D-512-81, ASTM Procedures
Low-Btu Liquid Feed	5	(LBF)	2,3	One 1/2 pint grab sample every 30 minutes composited into one sample	POHCs, Metals, Total Organic Halide, Viscosity, Density, Ash, Heating Value, Elemental Analysis.	GC Method A-004/ ASTM D-512-81, ASTM Procedures

[1] See Drawing 8813-00-F-017

[2] Not including additional quality control analyses

[3] For sample labeling and identification

[4] Separate sampling and analysis for Vin and SCC feeds during Test 3.

TABLE 2.3-1

PROCESS STREAMS SAMPLING AND ANALYSIS SCHEME FOR 3 TRIAL BURN TESTS WITH 3 RUNS PER TEST (CONT.)

Sample Type	Sample Location [1]	Sample Code [3]	Trial Burn Tests	Frequency of Sampling for Each Run	Analysis [2]	Method
Sludge Feed	6	(PSF)	2,3	One 1/2 pint grab sample every 30 minutes composited into one sample	Total Chloride, Heating Value, Ash, Ultimate Analysis, Density, Viscosity, Metals.	GC Method A-004/ ASTM D-512,81, ASTM Methods SW-846
Process Water (SDA makeup water)	7	(PWF)	1,2,3	One 1/2 pint grab sample every 30 minutes, composited into one sample.	POHCs, Total Organic Halide, Metals	GC/MS
Rotary Kiln Ash	8	(RKA)	1,2,3	Four 100-g grab samples composited into one sample	POHCs, EP Toxicity, Paint Filter Liquid Test, Metals	GC/MS, SW-846
Ash Quench Blowdown	9	(AQB)	1,2,3	One 1/2 pint grab sample every 30 minutes composited into one sample	POHCs, EP Toxicity, Total Solids, Metals	GC/MS, SW-846
Lime Slurry Feed	10	(LSF)	1,2,3	One 1/2 pint grab sample every 30 minutes composited into one sample	POHCs, EP Toxicity, Total Solids, Metals	GC/MS, SW-846
Dried Solids to Landfill	11	(DSL)	1,2,3	Four 100-g grab samples composited into one sample	POHCs, Total Solids, EP Toxicity, Paint Filter Test, Metals	GC/MS, Gravimetric, SW-846
Stack Gas	12	(SG)	1,2,3	2-hr composite	See Tables 2.3-2, 2.3-3 and 2.3-4	See Tables 2.3-2, 2.3-3 and 2.3-4

TABLE 2.3-2

SUMMARY OF PROCESS MONITORING DURING TRIAL BURN

Parameter	Location of Monitor	Type of Monitor	Operating Range	Permanent Recorder
Bulk Solids Weight	15-crane/clamshell	Load cells	0-3,000 lb	Yes
Containerized Waste Weight	16-automatic weigh sealant feed conveyor	Load cells	0-1,000 lb	Yes
Fuel Oil Flowrate	17A-line to burner on kiln 17B-line to burner on SCC	DP (differential pressure flowmeter)	0-10 gpm	Yes
High-Btu Liquid Waste Feed rate	18A-feed line to burner on kiln 18B-feed line to burner on SCC	Mass Flowmeter	0-10 gpm	Yes
Low-Btu Liquid Waste Feed rate	19A-feed line to nozzle on kiln 19B-feed line to nozzle on SCC	Mass Flowmeter	0-15 gpm	Yes
Sludge Feed rate	20-feed line to nozzle on kiln	Mass Flowmeter	0-15 gpm	Yes
Direct Burn Liquid Feed rate	21-feed line to nozzle on kiln	Mass Flowmeter	0-15 gpm	Yes
Primary Combustion Air	22A-air inlet duct to kiln 22B-air inlet duct to SCC	Thermal Dispersion Flowmeter	0-50,000 acfm 0-25,000 acfm	No
Rotary Kiln Pressure (Draft)	23-rotary kiln face plate	Pressure Transducer	-6 to 2" wc	Yes
Rotary Kiln Speed	24-kiln rollers	Tachometer	0-1.5 rpm	No
Rotary Kiln Temperature	25-kiln outlet	Type R Thermocouple	0-3,000°F	Yes
SCC Temperature	26-secondary chamber outlet	Type R Thermocouple	0-3,000°F	Yes
SCC Pressure (Draft)	27-secondary combustion	Pressure Transducer	-6 to 2" wc	Yes
SDA Temperature	28-SDA inlet	Type R Thermocouple	0-3,000°F	Yes
Fabric Filter Temperature	29-fabric filter inlet	Type R Thermocouple	0-3,000°F	Yes
Absorber Slurry Feed rate	30-recycle pump discharge	Magnetic Flowmeter	0-100 gpm	Yes
SDA Makeup Water Feed rate	30A	Mass Flowmeter	0-100 gpmYes	
Fabric Filter Pressure Differential	31-fabric filter	Pressure Transducer	0-10" wc	No
Oxygen	32-stack	Paramagnetic	0-25 Percent	Yes
Carbon Monoxide	32-stack	NDIR	0-500 ppm	Yes
Hydrogen Chloride	32-stack	Colorimetric	0-500 ppm	Yes
Combustion Gas Flowrate	32-stack	Thermal Dispersion Flowmeter	0-6,000 acfm	Yes
THC	32-stack	FID	0-500 ppmYes	

TABLE 2.3-3

SAMPLING AND ANALYSIS PARAMETERS FOR STACK GAS FOR 3 TRIAL BURN TESTS WITH 3 RUNS PER TEST

Test Parameters	Sample Method	No. of Samples Collected	No. of Samples Analyzed	Analysis Method
Velocity	Method 2	9	9	S-type-Pitot Tube
O_2 and CO_2	Method 3	9	9	Orsat
Moisture	Method 4	9	9	Gravimetric
CO	EPA Performance Specification 4, EPA Method 10	Continuous	Continuous	Continuous NDIR Emissions Monitor
THC	EPA Guidance Manual	Continuous	Continuous	Continuous Flame Ionization Analyzer
Particulate/HCl	Modified Method 5 or EPA Draft HCl Method	9	9	Gravimetric/ASTM D512-81
Volatile Organic Compounds	VOST	27	27	GC/MS
Semivolatile POHC	Modified Method 5	9	9	GC/MS
Metals	See Table 2.3-4	9	9	See Table 2.3-4

Note: Blank samples are not included in this table.

TABLE 2.3-4

SAMPLING AND ANALYSIS PARAMETERS FOR METALS
FOR 3 TRIAL BURN TESTS WITH 3 RUNS PER TEST

Test Parameters	Sample Method	No. of Samples Collected	No. of Samples Analyzed	Analysis Method
Lead	Method 12 or EPA MMM (1)	9	9	Atomic Absorption Spectroscopy
Arsenic	Method 108 or EPA MMM	9	9	Atomic Absorption Spectroscopy
Beryllium	Method 104 or EPA MMM	9	9	Atomic Absorption Spectroscopy
Mercury	Method 101A or EPA MMM	9	9	Atomic Absorption Spectroscopy
Other Metals	Modified Method 5 or EPA MMM	9	9	ICAD or GFAA

[1]US EPA is presently developing a methodology and sampling train for the determination of emissions of total particulate and metals from stationary source combustion processes. This method, referred to as the EPA Multiple Metals Method (MMM) will be applicable to determination of total chromium (Cr), cadmium (Cd), arsenic (As), beryllium (Be), barium (Ba), lead (Pb), antimony (Sb), mercury (Hg), silver (Ag), and thallium (Tl). If the MMM is fully developed and approved by EPA prior to the scheduling of the trial burn, and is also approved by FDER, this method will be used in place of MM5-M and Methods 12, 101A, 104, and 108 for determination of metals emissions and total particulate emissions from the incinerator.

Note: Blank samples are not included in this table.

monitoring parameters and locations are listed in Table 2.3-2. The locations of sampling and monitoring points are shown in Appendix D-5, Drawing 8813-00-F-017. The frequency and types of flue gas samples to be collected during the trial burn test program are detailed in Table 2.3-3 and 2.3-4.

Laboratory analyses for organic and inorganic constituents will be conducted on both the waste feeds and flue gas samples from each of nine runs (three test burns and three runs per test). Selected physical properties of the waste feeds will also be determined employing standard ASTM methodologies. In addition, where feasible, aliquots of the flue gas samples or extracts will be maintained in reserve for subsequent analysis if required. All analytical work will be conducted in accordance with EPA and ASTM procedures. A summary of each of these is provided in Table 2.3-1.

2.4 PROCESS MONITORING PROTOCOL

A summary of the monitored process variables for the trial burn test runs is found in Table 2.3-2 in Section 2.3. The variables include: auxiliary fuel flow, waste feed flows or charge weights, kiln and SCC temperatures and pressures, other process variables (combustion air flow rate, kiln speed, lime slurry and makeup water flow rates, stack gas O_2, CO, and THC concentrations, and atomization steam pressure), and effluent flows (dried solids discharge rate). The locations of the monitors are also summarized in Table 2.3-2, and the locations of sampling and monitoring points are referenced and shown in Drawing 8813-00-F-017, a process schematic. The type of monitor, its operating range, and whether there is a permanent recorder is also indicated in the table. The permanent recorders are located in the control room and may be a strip-chart device, a computer data log or combination of these. The indicator will be the CRT display in the control room.

Prior to the execution of the trial burn, all monitoring instruments will be calibrated as discussed in Section 6.4. During the course of each trial burn test run, all recording measurements made onto strip charts will show a time line for start (and time) of the run and a time line for the completion (and time) of the run. If data logs are kept in parallel with the strip-chart data, both sets of data will be available and used for review and reporting of test results. If a monitoring device is the only provision made for monitoring a process variable, then during a trial burn run measurements will be recorded onto a log sheet every 15 minutes (including the start and finish of the run) which will show the time of the measurement and the value of the measurement.

2.5 EXPECTED STACK GAS CONCENTRATIONS AND DETECTION LIMITS

For each test, the outlet concentrations of each POHC and designated metal have been estimated. This was accomplished by determining the following for each feed stream with a POHC or metal:

- The mass flow of the feed stream into the incinerator
- The mass flow of the POHC or metal into the incinerator
- The mass flow of the POHC or metal out of the incinerator, calculated for a conservative, estimated DRE of 99.99% for POHCs and assumed APC control efficiency of 99% for chromium, barium, beryllium, and silver, 90% for mercury, and 95% for other metals
- An estimate of the effluent concentration of POHC or metal, using the measured flow of gas out of the stack and the mass and energy balances

Since more than one stream can contain a similar POHC or metal, a summation of all effluent concentrations of identical POHCs and metals will be made to estimate the total effluent concentration. These results are presented in Tables 2.5-1, 2.5-2, and 2.5-3 for Trial Burn Tests one, two, and three respectively.

Since a GC/MS system is being used to analyze the POHCs, an acceptable range for analysis is 10-2000 ng of each POHC collected in 10 to 20 L of gas from the VOST. This yields an acceptable range of concentrations for each POHC of 1 to 200 micrograms/dry-std-m^3 for 10 L of gas, or 0.5 to 100 micrograms/dry-std-m^3 for 20 L of gas. The expected stack gas detection limits for metals, volatile organic compounds (VOCs), and semivolatile organic compounds (semivolatile POHCs, PCDDs, and PCDFs) are shown in Table 2.5-4.

The measurements needed to demonstrate compliance with 40 CFR 264.343 and 264.345 were given in Table 2.3-2 of Section 2.3, under the heading of Process Monitoring During Trial Burn, along with all other instrumentation and monitoring systems that are planned for installation on the incineration system. Specific variables to be monitored or measured include:

- Waste and fuel flows to kiln and SCC;
- POHC and metals concentrations in the stack gas, waste feeds, and effluents;
- HCl, O_2, particulate, THC, and CO concentrations in stack gas;
- Velocities (or flow rates) of stack gas;
- Flow rates, temperature, and ash content of lime slurry streams in spray dryer absorber; and
- Temperatures and pressures of the various feed streams, atomization medium lines, and combustion chamber exit streams and fabrication pressure drop.

TABLE 2.5-1

PROJECTED MAXIMUM POHC EFFLUENT CONCENTRATION: TEST 1

	Bulk Solid Waste
POHC	C_2Cl_6
POHC MW	236.74
POHC Mass Fraction	0.02
Kiln Flow, lb/hr	10,400
Kiln POHC Flow, lb/hr	208.00
SCC Flow, lb/hr	0
SCC POHC Flow, lb/hr	0
Total POHC Flow, lb/hr	208.00
Total POHC Flow, g/min	1,572.00
Assumed POHC DRE	0.9999
Total POHCs Out	
mg/min	157,200
Exit Gas Flow, acfm	68,555
Exit Gas Flow, dry-std-m^3/min	784
Exit Gas Flow, dscfm	27,682
Exit Gas Maximum POHC Conc.,	
mg/dry-std-m^3	200.5
ppb(v)	20.4

@ std cond: 68°F., 760 mm Hg, 22.4 L/gmol

Maximum Total POHC effluent concentration:

C_2Cl_6: 200.7 micro-grams/dry-std-m^3

TABLE 2.5-2

PROJECTED MAXIMUM POHC EFFLUENT CONCENTRATION: TEST 2

	Direct-Burn Waste	High-Btu Waste	Containerized Waste
POHC	CCl_4	CCl_4	C_6H_5Cl
POHC MW	153.84	153.84	112.56
POHC Mass Fraction	1.00	0.05	0.03
Kiln Flow, lb/hr	800	5,500	2,500
Kiln POHC Flow, lb/hr	800	275	75
SCC Flow, lb/hr	0	0	0
SCC POHC Flow, lb/hr	0	0	0
Total POHC Flow, lb/hr	800	275	75
Total POHC Flow, g/min	6,048	2,079	567
Assumed POHC DRE	0.9999	0.9999	0.9999
Total POHCs Out, micro-g/min	604,786	207,895	56,699
Exit Gas Flow, acfm	63,465	63,465	63,465
Exit Gas Flow, dscfm	27,192	27,192	27,192
Exit Gas Flow, dry-std-m^3/min	770	770	770
Exit Gas Maximum POHC Conc.,			
micro-g/dry-std-m^3	785	270	74
ppb(v)	122.8	42.2	15.8

std cond: 68°F., 760 mm Hg, 22.4 L/gmol

TABLE 2.5-2

PROJECTED MAXIMUM POHC EFFLUENT CONCENTRATION: TEST 2 (CONT.)

	Sludge Waste	Low-Btu Waste
POHC	$C_6H_3Cl_3$	C_2Cl_4
POHC MW	181.45	165.83
POHC Mass Fraction	0.05	0.02
Kiln Flow, lb/hr	3500	0
Kiln POHC Flow, lb/hr	175	0
SCC Flow, lb/hr	0	3,000
SCC POHC Flow, lb/hr	0	60
Total POHC Flow, lb/hr	175	60
Total POHC Flow, g/min	1323	454
Assumed POHC DRE	0.9999	0.9999
Total POHCs Out, micro-g/min	132,297	45,359
Exit Gas Flow, acfm	63,465	63,465
Exit Gas Flow, dscfm	27,192	27,192
Exit Gas Flow, dry-std-m^3/min	770	770
Exit Gas Maximum POHC Conc.,		
micro-g/dry-std-m^3	171.8	58.9
ppb(v)	22.8	8.5

std cond: 68°F., 760 mm Hg, 22.4 L/gmol

Maximum Total POHC effluent concentration:
CCl_4: 1,055 micro-grams/dry-std-m^3
C_6H_5Cl: 74 micro-grams/dry-std-m^3
$C_6H_3Cl_3$: 171.8 micro-grams/dry-std-m^3
C_2Cl_4: 58.9 micro-grams/dry-std-m^3

Maximum Metals Concentration

Arsenic	919.5 micro-grams/dry-std-m^3
Beryllium	32.5 micro-grams/dry-std-m^3
Cromium	1,628.6 micro-grams/dry-std-m^3
Chromium	489.4 micro-grams/dry-std-m^3
Lead	11,532.5 micro-grams/dry-std-m^3
Mercury	8,103.9 micro-grams/dry-std-m^3
Silver	4,885.7 micro-grams/dry-std-m^3
Thauium	11,532.5 micro-grams/dry-std-m^3
Barium	4,909.1 micro-grams/dry-std-m^3
Anitmony	24,545.5 micro-grams/dry-std-m^3

TABLE 2.5-3

PROJECTED MAXIMUM POHC EFFLUENT CONCENTRATION: TEST 3

	Low-Burn Waste	High-Btu Waste	Containerized Waste
POHC	C_2Cl_4	CCl_4	C_6H_5Cl
POHC MW	165.83	153.84	112.56
POHC Mass Fraction	0.02	0.05	0.03
Kiln Flow, lb/hr	1000	3800	6000
Kiln POHC Flow, lb/hr	20	190	180
SCC Flow, lb/hr	0	2000	0
SCC POHC Flow, lb/hr	0	100	0
Total POHC Flow, lb/hr	20	290	180
Total POHC Flow, g/min	151.2	2192	1361
Assumed POHC DRE	0.9999	0.9999	0.9999
Total POHCs Out, micro-g/min	15,112	219,235	136,077
Exit Gas Flow, acfm	65,005	65,005	65,005
Exit Gas Flow, dscfm	28,216	28,216	28,216
Exit Gas Flow, dry-std-m^3/min	799	799	799
Exit Gas Maximum POHC Conc.,			
micro-g/dry-std-m^3	18.9	274.4	170.3
ppb(v)	2.7	42.9	36.4

std cond: 68°F., 760 mm Hg, 22.4 L/gmol

TABLE 2.5-3

PROJECTED MAXIMUM POHC EFFLUENT CONCENTRATION: TEST 3 (CONT.)

	Sludge Waste	Bulk Solid Waste
POHC	$C_6H_3Cl_3$	C_2Cl_6
POHC MW	181.45	236.74
POHC Mass Fraction	0.05	0.02
Kiln Flow, lb/hr	2,000	1,750
Kiln POHC Flow, lb/hr	100	35
SCC Flow, lb/hr	0	0
SCC POHC Flow, lb/hr	0	0
Total POHC Flow, lb/hr	100	35
Total POHC Flow, g/min	756	265
Assumed POHC DRE	0.9999	0.9999
Total POHCs Out, micro-g/min	75,598	26,459
Exit Gas Flow, acfm	65,005	65,005
Exit Gas Flow, dscfm	28,216	28,216
Exit Gas Flow, dry-std/m^3-min	799	799
Exit Gas Maximum POHC Conc.,		
micro-g/dry-std-m^3	94.6	33.1
ppb(v)	12.5	3.36

std cond: 68°F., 760 mm Hg, 22.4 L/gmol

Maximum Total POHC effluent concentration:

C_2Cl_4:	18.9 micro-grams/dry-std-m^3
CCl_4:	274.4 micro-grams/dry-std-m^3
C_6H_5Cl:	170.3 micro-grams/dry-std-m^3
$C_6H_3CL_3$:	94.6 micro-grams/dry-std-m^3
C_2Cl_6:	33.1 micro-grams/dry-std-m^3

Maximum Metals Concentration:

Arsenic	886.1 micro-grams/dry-std-m^3
Beryllium	31.4 micro-grams/dry-std-m^3
Cromium	1,569.5 micro-grams/dry-std-m^3
Chromium	471.6 micro-grams/dry-std-m^3
Lead	11,113.9 micro-grams/dry-std-m^3
Mercury	7,809.8 micro-grams/dry-std-m^3
Silver	4,708.4 micro-grams/dry-std-m^3
Thauium	11,113.9 micro-grams/dry-std-m^3
Barium	4,730.9 micro-grams/dry-std-m^3
Anitnony	23,654.6 micro-grams/dry-std-m^3

TABLE 2.5-4

EXPECTED STACK GAS DETECTION LIMITS FOR METALS AND ORGANIC COMPOUNDS

Analyte[b]	Stack Gas Concentration Lower Limit of Detection[a] (dry standard gas conditions)	
Sb	8	$\mu g/m^3$
Ag, Tl	2	$\mu g/m^3$
Ba, Be	0.5	$\mu g/m^3$
Cr, Pb	0.3	$\mu g/m^3$
Cd, Hg	0.03	$\mu g/m$
As	0.3	$\mu g/m^3$
VOCs[b]	0.25-0.5	$\mu g/m^3$
Semivolatile POHCs	1	$\mu g/m^3$
PCDDs and PCDFs[c]	0.2-1.0	ng/m^3

[a] It is assumed that gas sample volumes are 1.7 m^3 for metals and semivolatile POHCs, 20 l for VOCs and 2.5 m^3 for PCDDs and PCDFs.

[b] Detection limits are based on ICAD analysis for all metals except As, Be, Cd, Cr, and Pb (GFAA) and Hg (CVAA).

[c] Detection limits are per VOST trap or combined trap pair.

[d] The lower end of detection range applies to tetra-CDD or -CDF congeners (including 2,3,7,8-TCDD or -TCDF); the upper end of the detection range applies to octa-CDD or -CDF congeners.

3.0 SAMPLING PROCEDURES

3.1 INTRODUCTION

The sampling procedures that will be used for the trial burn tests are described in this section. Reference methods are reproduced in Attachment D-6-2.

3.2 WASTE FEED AND FUEL SAMPLING

The procedures for collecting samples of the waste feed and fuel are provided below.

3.2.1 Sample Container Preparation

All sample containers will be cleaned and sealed in the laboratory prior to the test. They will be new amber glass bottles with Teflon cap liners. No glue will be used to attach the liners to the caps.

The containers for collection of samples for heating value, ash, chlorine, and organic analyses will be cleaned in the laboratory as follows:

- Rinse repeatedly with tap water
- Soak in hot soapy water
- Rinse with hot water
- Rinse with distilled water
- Rinse with methanol
- Bake in 140°C oven for at least one hour
- Let cool, cap and place in storage container

The containers for collection of samples for metals analyses will be cleaned in the laboratory as follows:

- Rinse with deionized water
- Soak Teflon lid liners and bottles in 50% HNO_3 for at least eight hours
- Rinse with deionized water
- Air dry
- Cap and place in storage container

3.2.2 Sampling of Direct-Burn Organic Liquid Waste and Auxiliary Fuel

Direct-Burn Organic Liquid Waste Feed. Since the direct burn liquid to be used during the trial burn is pure technical grade CCl_4, two grab samples of this material will be collected for analysis. One of these samples will be analyzed for high heating value, ash content, chlorine content, and volatile organic compound concentrations. The other composite sample will be analyzed for metals.

Auxiliary Fuel. Grab samples of the fuel oil supplied to the kiln and SCC during Tests one and three will be collected from valved sample taps in the fuel oil feedlines upstream of the kiln or SCC. Samples will be collected into 500-ml, amber glass sample containers at 15-minute intervals during each three-hour run. The sample taps will be allowed to flow briefly prior to sampling to flush out any accumulated materials in the tap. Samples will be composited in the field to provide two composite samples for each run. One of these samples will be analyzed for high heating value, ash content, chlorine content, and volatile and semivolatile organic compound concentrations. The other composite sample will be analyzed for metals.

3.2.3 Sampling of High-Btu and Low-Btu Waste

During each run of Tests two and three, two 1/2-pint grab samples will be collected at 15-minute intervals from the low-Btu and high-Btu waste feeds to the kiln and SCC. The high-Btu waste feeds to the kiln and SCC during trial burn test three will be sampled and analyzed separately, as only the feed to the SCC will be spiked with metals. These samples will be composited in the field to provide two composite samples for each stream for each run. One of these samples will be analyzed for high heating value, ash content, chlorine content, and volatile and semivolatile organic compound concentrations. The other composite sample will be analyzed for metals. These samples will be collected in the same manner as the fuel samples described above.

A flowmeter with a totalizer unit will be used to continuously monitor each of the waste feed rates. These instruments will be calibrated once prior to the start of the trial burns. In addition, the level of the waste feed holding tanks will be recorded every 15 minutes.

3.2.4 Sampling of Containerized and Bulk Solid Waste

Before the start of each trial burn test run of Tests two and three, all of the containers (drums) of solid waste to be fed to the incinerator during the test run will be marked with an identifying number, weighed, sampled (a grab sample of every drum) and spiked with a measured weight of POHC (1,2,4 trichlorobenzene), and this information will be recorded. The grab samples from each test run will be composited, and the composite samples will be analyzed for high heating value, ash content, chlorine content, metals content, and volatile and semivolatile compound concentrations.

During each run of Test one and Test three, a grab sample will be taken from the feed hopper of every fifth charge of the bulk solid waste being fed to the kiln solids feed chute. The samples for each run will be composited, and the composite sample will be analyzed for high heating value, volatile and semivolatile organic compound concentrations, ash content, metals content, and chlorine content.

3.2.5 Sampling of Sludge Waste

The analysis of the sludge waste feed will exclude analysis for the POHC, as noted in Table 2.3-1, as the POHC feed rate will be measured by a metering pump. Samples of the sludge waste feed will be collected every 15 minutes from a tap upstream of the sludge feed pump. The sludge samples will be analyzed for volatile and semi-volatile organic compound cencentrations, chlorine content, metals content, heating value, ash content, ultimate analysis, and density. Since sludge feeds are expected to be heterogeneous, sludge samples will not be composited and will be analyzed individually to establish a range of variation.

3.3 SAMPLING OF KILN ASH, RESIDUAL SOLIDS, AND LIME SLURRY

Rotary Kiln Ash. Samples of the rotary kiln ash will be collected from the ash conveyor of the kiln during each test run. Samples will be collected from several conveyor locations and composited into 500-ml, amber-glass sample containers at 15-minute intervals during each three-hour run. The composite samples from each test run will be analyzed for semivolatile organic compounds, total solids, metals content, and EP toxicity, and the paint filter test will be performed.

Residual Solids. Samples of the APC dried solids will be collected from the discharge conveyor prior to recycle silo. Samples will be collected into 500-ml, amber-glass sample containers at 15-minute intervals during each three-hour run. Each sample will be taken in the same manner as the kiln ash samples, and composite samples from each test run analyzed for the same parameters.

Lime Slurry. Samples of the lime slurry will be collected from a sample tap in the lime slurry line going to the SDA. Samples will be collected into 500-ml, amber glass sample containers at 15-minute intervals during each three-hour run. Each sample will be taken in the same manner as the kiln ash samples, and composite samples from each test run analyzed for the same parameters.

Make-up Process Water. Samples will be collected in 500-ml, amber glass sample containers from a tap located in the process water holding tank. One set of duplicate samples will be collected during each three-hour run. Each sample will be analyzed for semivolatile organics and metals, total chlorides, total solids, and pH.

3.4 STACK GAS SAMPLING FOR VOLATILE ORGANIC COMPOUNDS

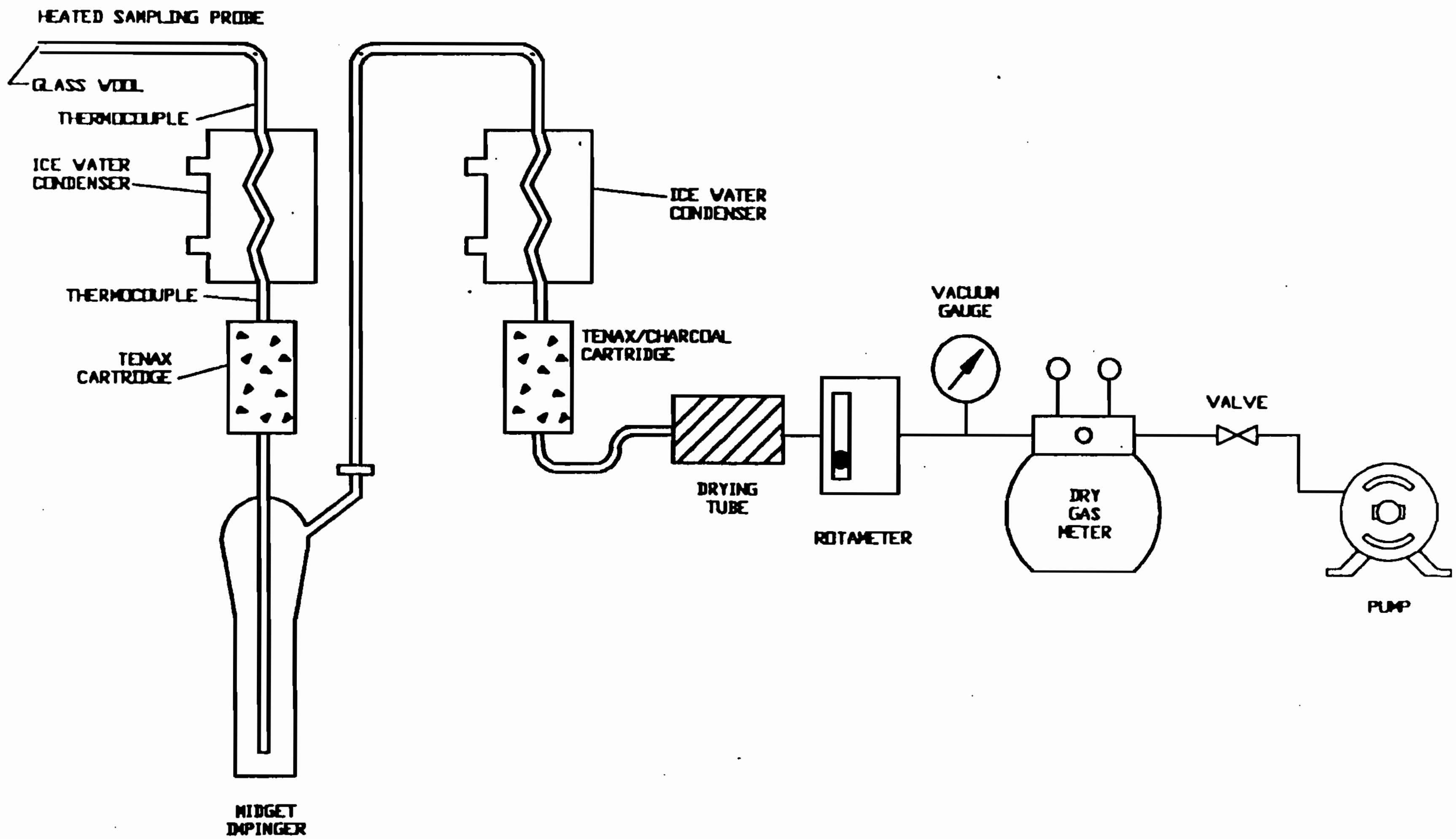
Volatile POHCs will be collected from the stack gas by the VOST method. The VOST method will provide samples for determination of carbon tetrachloride, chlorbenzene, and tetrachloroethylene. Hexachloroethane and trichlorbenzene will be determined by modified Method 5 (MM5-P).

3.4.1 Vost Sampling

VOST Sampling. The volatile organic sampling train (VOST) will be used for determination of volatile concentrations in the flue gas. The VOST method uses Tenax, an organic sorbent, to collect the volatile organic species of interest. The detailed sampling procedures will follow EPA reference test protocol. A brief description is given here.

The train will consist of a heated, glass-lined probe with a glass wool plug to remove particulate, followed by an assembly of condensers and organic resin traps as illustrated in Figure 3.4.1-1. The first condenser will cool the gas stream and will condense the water vapor that is present. The flue gas and condensed moisture will then pass through a cartridge containing 1.5 g of Tenax resin (60/80 mesh). The condensate will be collected in the first

FIGURE 3.4.1-1
SCHEMATIC OF VOLATILE ORGANIC SAMPLING TRAIN (VOST)



impinger and will be continually purged by the gas stream itself. The second conjunction with each of the three tests. During the sampling program, the reagent and sorbent resin samples associated with this train will be maintained off site to minimize the potential for sample contamination from the ambient air. All resin cartridges and collected samples associated with this train will be stored and transported at a temperature of 4°C to prevent contamination and to minimize degradation of the Tenax resin.

Sample collection by the VOST equipment will be conducted in accordance with the procedures described in Test Methods for Evaluating Solid Waste, SW-846, Method 0030.

3.5 STACK GAS SAMPLING FOR SEMIVOLATILE ORGANIC COMPOUNDS, PARTICULATE AND METALS, HYDROCHLORIC ACID, AND PCDDS AND PCDFS

Three types of MM5 sampling trains or alternative methods approved by EPA and FDER will be used to collect stack gas samples for analyses of semivolatile organic compounds, including PCDDs and PCDFs; particulates, HCl, and metals with the exception of arsenic, beryllium, lead, and mercury. EPA Reference Methods 108, 104, 12 and 101A or alternative methods approved by EPA and FDER will be used to collect samples of these metals. Table 3.5-1 delineates the use of these trains and references the figures which illustrate these trains. The difference between the trains will be in the number and types of impingers employed in each train. These differences are described in Table 3.5-2.

A minimum of 12 sampling points, as indicated in Figure 3.5-1, are required by U.S. EPA Reference Method 1 for the collection of representative

TABLE 3.5-1

MM5 SAMPLING TRAINS

Train Type [1] [2]	Analysis	Test	Figure
MM5-O	SV POHCs PCDDs & PCDFs HCl	1,2,3 2 1,2,3	3.5.1-1
MM5-M	Particulate (Except As, Be, Hg, and Pb)	2,3	3.5.2-1
MM5-P	Particulate HCl	1,2,3 1,2,3	3.5.3-1
Method 108	Arsenic	2,3	3.5.4-1
Method 104	Beryllium	2,3	3.5.4-2
Method 101A	Mercury	2,3	3.5.4-3
Method 12	Lead	2,3	3.5.4-4

[1]US EPA is presently developing a methodology and sampling train for the determination of emissions of total particulate and metals from stationary source comnustion processes. This method, referred to as the Multiple Metals Method (MMM), will be applicable to determination of total chromium (Cr), cadmium (Cd), arsenic (As), beryllium (Be), barium (Ba), lead (Pb), antimony (Sb), mercury (Hg), silver (Ag), and thallium (Tl). If the MMM is fully developed and approved by EPA prior to the scheduling of the trial burn, and is also approved by FDER, this method will be used in place of MM5-M and methods 12, 101A, 104, and 108 for determination of metals emissions and total particulate emissions from the incinerator.

[2]US EPA has proposed a Draft Method for the Determination of HCl Emissions from Municipal and Hazardous Waste Incinerators in conjunction with the Draft Emission Standards for Emissions of Metals and Hydrogen Chloride from Hazardous Waste Incinerators. The proposed draft method will be used for testing HCl emissions from the FFPI incinerator if it is approved by EPA and FDER prior to the scheduling of the trial burn test, and EPA Reference Method 5 or an alternative method approved by EPA and FDER will then be used to determine particulate emissions from the incinerator. Otherwise, MM5-P or an alternative method approved by both EPA and FDER will be used.

TABLE 3.5-2

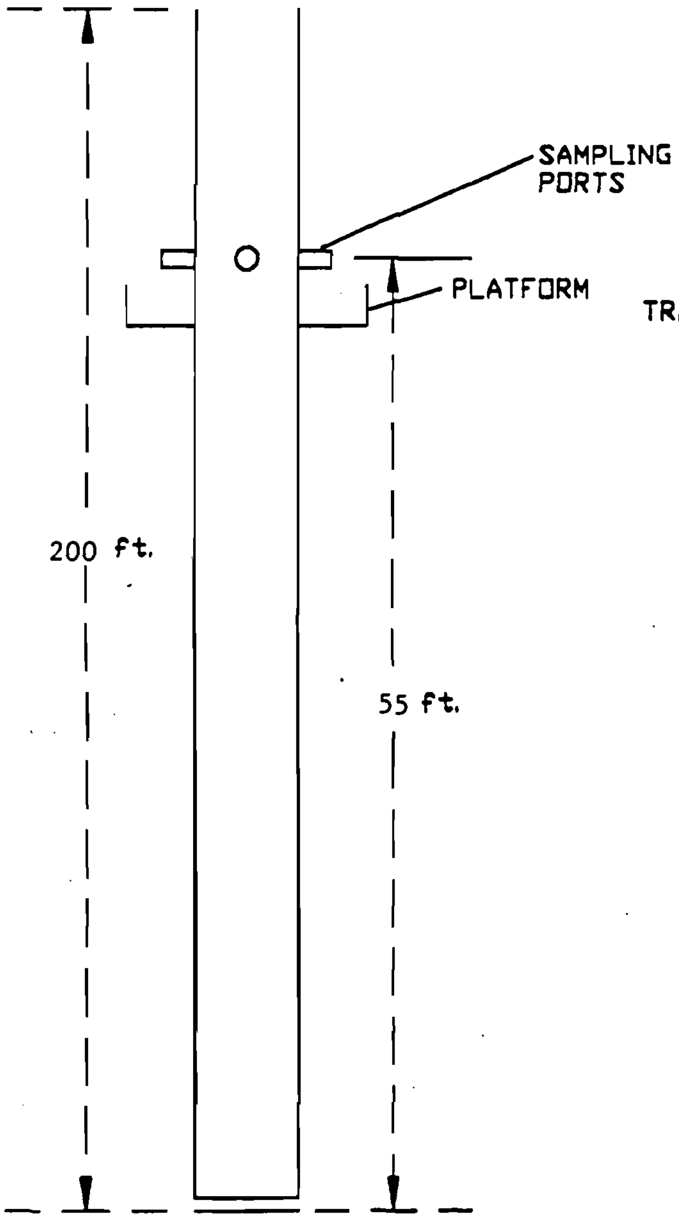
UNIQUE COMPONENTS OF MM5 SAMPLING TRAINS

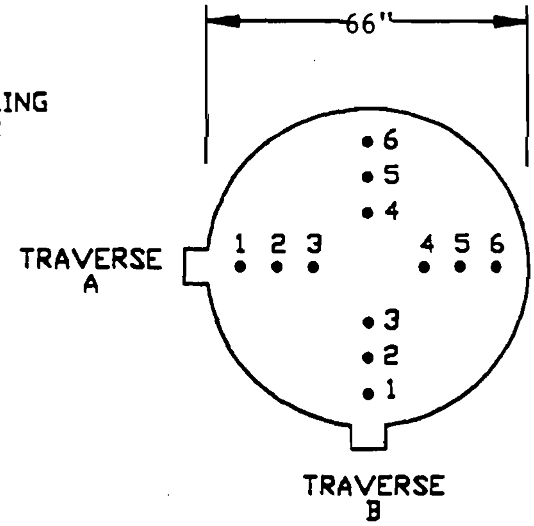
Component Number[a]	Description
MM5-O Sampling Train	
A	A water cooled glass spiral condenser which lowers the sample temperature to less than 20°C.
B	A XAD-2 resin module with a water-cooled jacket.
1	An impinger filled with double-distilled water.
2	An empty impinger.
3	An impinger filled with 0.1N Na_2CO_3.
4	An impinger containing blue-indicating silica gel.
MM5-M Sampling Train	
1	An empty impinger to collect condensate.
2	An impinger containing 5% HNO_3 and 10% H_2O_2.
3	An impinger containing 5% HNO_3 and 10% H_2O_2.
4	An impinger containing 1.5% $KMnO_4$ and 10% H_2SO_4.
5	An empty impinger.
6	An impinger containing blue-indicating silica gel.
MM5-P Sampling Train	
1	An impinger containing distilled water and used to collect condensate.
2	A dry impinger used to collect condensate.
3	An impinger containing 0.1N Na_2CO_3.
4	A dry impinger.
5	An impinger containing blue-indicating silica gel.

[a] Component number is illustrated in Figures 3.5.1-1, 3.5.2-1, and 3.5.3-1.

FIGURE 3.5-1

LOCATION OF SAMPLING PORTS AND TRAVERSE POINTS





TRAVERSE POINT	DISTANCE FROM NEAREST INSIDE WALL (INCHES)
1	2.90
2	9.70
3	19.47
4	19.47
5	9.70
6	2.90

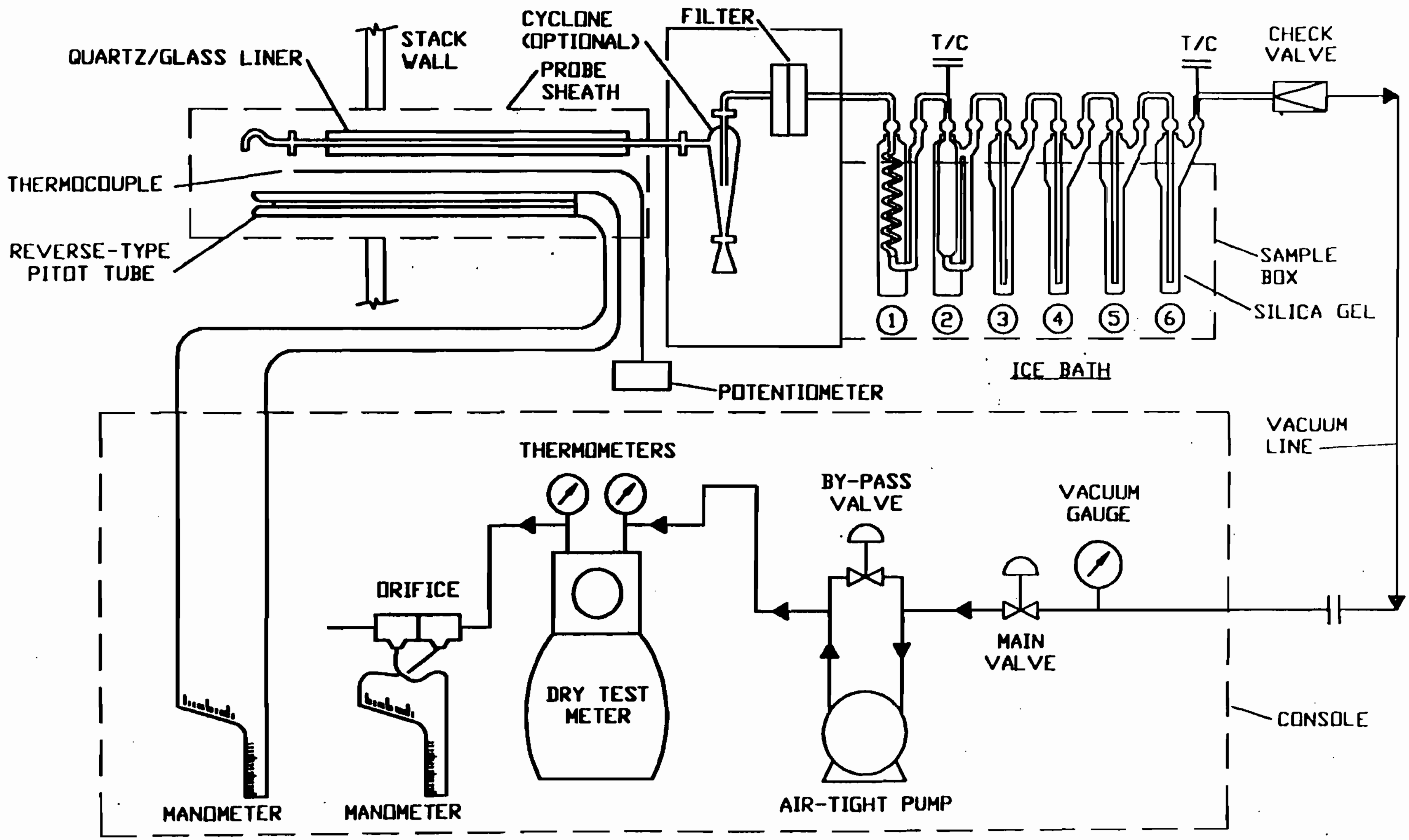
samples of particulates, semivolatile organic compounds, metals, and HCl from a source. The absence of cyclonic flow at the sample location will be verified in accordance with EPA Reference Method 1 prior to the start of the sampling activities. Each point will be sampled for a period of five minutesduring each sampling episode, providing for a total run time of 60 minutes (12 locations x 5 minutes per location). Details of the three MM5 sampling procedures areas follow.

3.5.1 Stack Gas Sampling for Semivolatile Organic Compounds

The semivolatile POHCs, present in the stack gas will be collected during trial burn tests one, two, and three using an MM5-O sampling train as shown in Figure 3.5.1-1. PCDDs, and PCDRs will be determined only during trial burn test two. The MM5 procedure consists of isokinetically sampling a predetermined volume of stack gas with the MM5 apparatus. In general, the MM5 sampling procedures parallel the procedures specified in EPA Methods 1 through 5 for particulate emissions testing.

The MM5 sampling train is based upon the apparatus design normally employed for sampling conducted under U.S. EPA Method 5 but is modified to include a special coiled condenser/sorbent module assembly for collection of semivolatile organic compounds. The MM5-O train components consist of a heat-traced borosilicate glass probe housed in a stainless-steel sheath, an optional cyclone, a high-efficiency quartz fiber filter supported on a glass frit mounted in a glass holder, a water-cooled glass coil condenser and glasstube filled with about 70 g XAD-2 resin-type sorbent (Figure 3.5.1-2), four glass impingers, a flow control module containing a leakless vacuum pump,

FIGURE 3.5.1-1
MM5-O SAMPLING TRAIN FOR SEMI-VOLATILE ORGANIC COMPOUNDS, PCDDS AND PCDFS, AND HYDROCHLORIC ACID



(A) Condenser with Ice Water Jacket

(B) XAD Resin Cartridge with Ice Water Jacket

(1) 2 L Modified Greenburg - Smith, 100 mL of Double Distilled in glass H_2O

(2) Modified Greenburg - Smith, empty

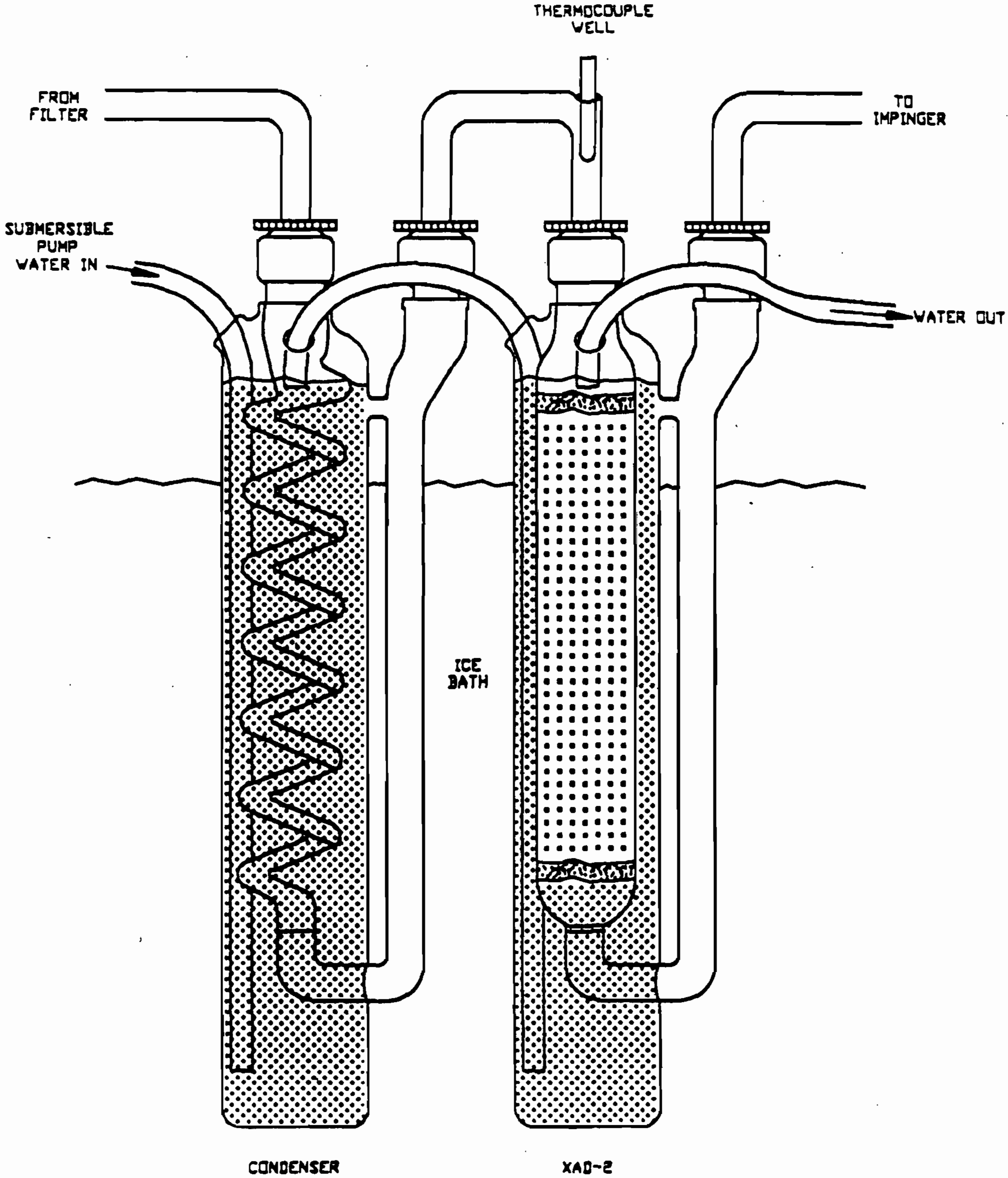
(3) Greenburg - Smith, 100 mL 0.1 N Na_2CO_3

(4) Modified Greenburg - Smith, SiO_2

Date: 9/29/89
Revision: 1

FIGURE 3.5.1-2

MM5 CONDENSER AND XAD RESIN CARTRIDGE



a dry gas meter, an orifice meter and appropriate valves, gauges, and associated hardware to permit control and monitoring of the gas sampling rate. The four impingers are of the Greenburg-Smith design modified as follows:

- The first impinger is a modified Greenburg-Smith impinger. The impinger is modified by removal of the nozzle/plate assembly, and the stem length is extended to within 1/2" from the bottom of the impinger bottle. Instead of the normal 500-ml bottle, a 2-L bottle has been added to collect the large amount of condensate;

- The second impinger is the standard Greenburg-Smith tip design with the normal 500-ml impinger capacity;

- The third impinger is of the standard Greenburg-Smith tip design; and

- The fourth impinger is of the modified Greenburg-Smith design.

The impingers will be charged as follows:

- Impinger one: 100 ml of DDI;
- Impinger two: empty;
- Impinger three: 0.1 N Na_2CO_3; and
- Impinger four: approximately 200 g of blue indicating-type silica gel.

Because of the low particulate emissions expected for this trial burn, a cyclone will not be used. The filter holder assembly is housed in a temperature-controlled oven maintained at 120 ± 14°C. Because of the potential for contamination from the use of silicone sealant grease, all glass-to-glass connections prior to and including the second impinger will be made without the use of sealant grease.

The MM5 equipment will be calibrated, checked for proper operation and cleaned for use prior to arrival on site.

At a minimum, the following equipment will be calibrated:

- Dry gas meter/orifice;

- Stack temperature thermocouple;
- Filter oven thermocouple;
- Dial thermometers for gas meter;
- Probe nozzles; and
- Pitot tube (by geometric standards).

Copies of all calibration data will be placed in the project calibration data file and will be submitted with the final report.

All surfaces in the MM5 sampling trains that will come into contact with the sample gas stream will be thoroughly cleaned. The cleaning procedure is as follows:

- Scrub and soak in hot, soapy water;
- Hot water rinse;
- Distilled water rinse;
- Acetone rinse; and
- Air dry or bake in 100°C oven until dry.

All other components will be cleaned and prepared in accordance with Method 5 procedures. To minimize the potential for contamination of sampling train glassware, all glassware components will be sealed with acetone/hexane-rinsed aluminum foil prior to being packed for storage and transport. All remaining sampling train components will be cleaned and prepared in accordance with routine Method 5 procedures.

In order to ensure a leak-free fit, all MM5 sampling train joint fittings will be greaseless fittings modified with threaded Teflon fittings. The MM5 organic modules are one-piece assemblies, charged with approximately 75 g of sorbent.

All glassware, rinse bottles and associated apparatus used for in-field sampling and sample recovery will be thoroughly cleaned and conditioned. This includes a final rinse with hexane. Rinse bottles used will be made of Teflon (or equivalent). No non-Teflon plastic components will be used. All sample containers will be glass with Teflon-lined lids.

Quartz fiber filters will be used. Identification numbers will not be stamped on these filters. The filters are placed in glass petri dishes which are marked with an identification number.

The resin to be used in the MM5 train will be rinsed and extracted to remove any contaminants which may interfere with the analysis for the POHCs of interest. The resin traps will be packed within two weeks of transport to the field. Once packed, the traps will be sealed with aluminum foil and stored.

All sample bottles required for recovery of the MM5 samples will be amber glass bottles or clear glass bottles wrapped in aluminum foil with Teflon-lined lids. Bottles are required for probe and filter front-half rinse, back-half and condenser rinse, and condensate impinger contents. Recovery procedures for the MM5-O system are summarized in Table 3.5.1-1.

3.5.2 Stack Gas Sampling for Particulates and HCl

A U.S. EPA Modified Method 5 (MM5-P) sampling train will be used to sample simultaneously for particulates and HCl. Sampling will be isokinetic (± 10%) with readings of the flue gas parameters recorded at each sampling point. A schematic of the MM5-P train is given in Figure 3.5.2-1.

The sample train consists of a glass-lined probe with a stainless-steel button-hook nozzle and attached thermocouple and pitot tubes. After entering the probe, the gas passes through a heated, glass-fiber filter. The filter is

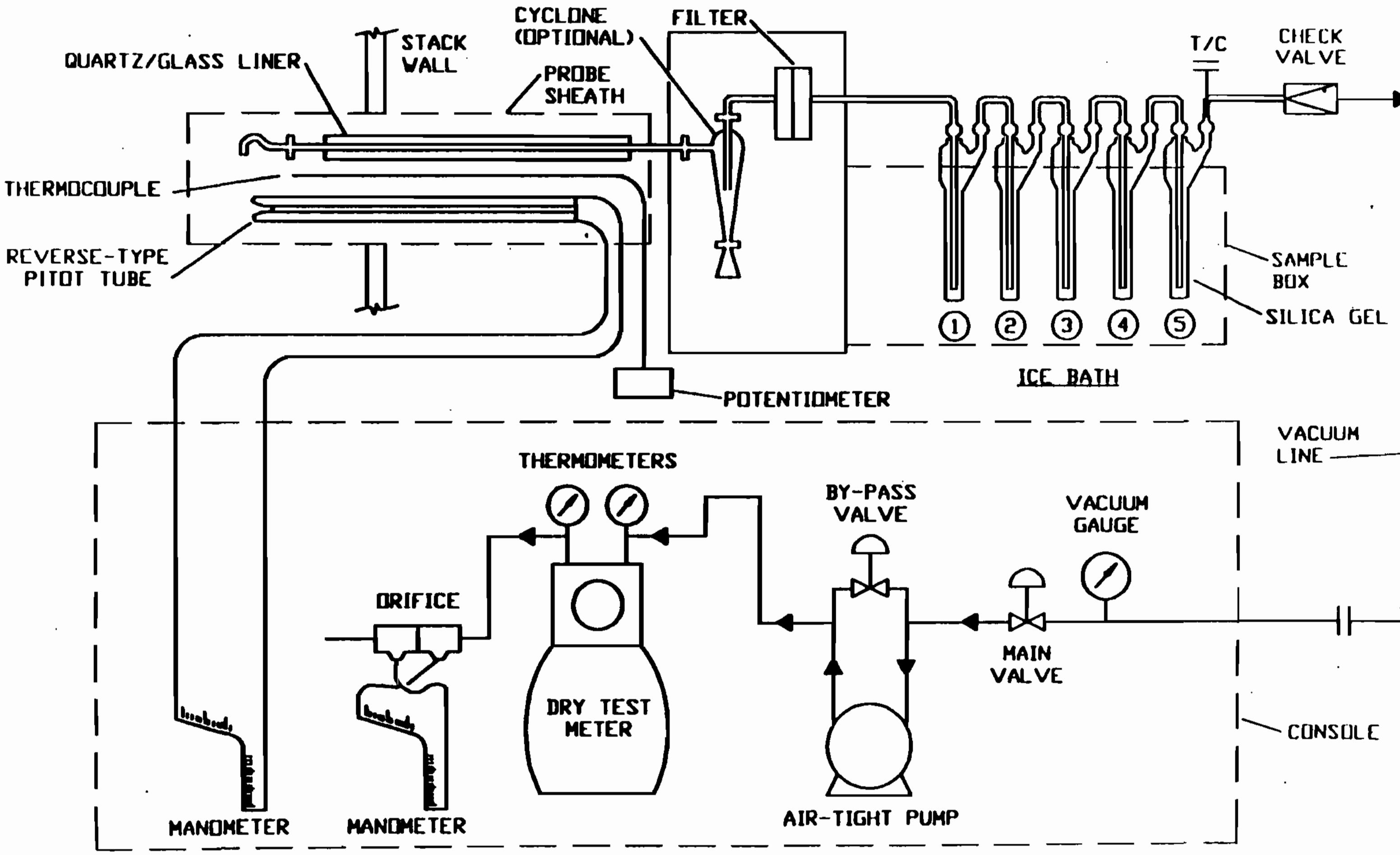
TABLE 3.5.1-1

SAMPLE RECOVERY PROCEDURES

Sample Container	Sample/Procedure
MM5-O Sampling Train	
1	Filter: Recover the filter with Teflon-coated or stainless steel forceps and place in a labeled glass petri dish.
2	XAD-2 Resin: Weigh impinger and seal resin module with glass stoppers.
3	Front-half Rinse: Triple-rinse and brush the probe nozzle, probe and all glassware up to and including the front half of the filter with acetone and then hexane. Place the rinse in the sample container.
4	Condensate HCl Aliquot: Weigh the condensate impinger and remove a 25 ml aliquot sample from the condensate for HCl analysis.
5	Condensate: Transfer the remaining condensate to the sample container and rinse the impinger with measured amounts of acetone and hexane.
6	Na_2CO_3 HCl Aliquot: Weigh the Na_2CO_3 impinger and remove a 25 ml aliquot sample from the impinger solution for HCl analysis.
7	Na_2CO_3: Weigh the Na_2CO_3 and dry impingers and transfer contents to sample container. Rinse the impingers with a measured amount of DOW.
	Place all samples in an iced cooler for transport to the laboratory.

FIGURE 3.5.2-1

MM5-P SAMPLING TRAIN FOR PARTICULATE AND HYDROCHLORIC ACID



(1) Modified Greenburg-Smith, 100 ml H_2O
(2) Modified Greenburg-Smith, Empty
(3) Greenburg-Smith, 100 ml 0.1 N Na_2CO_3
(4) Modified Greenburg-Smith, Empty
(5) Modified Greenburg-Smith, SiO_2

followed by a series of five impingers in an ice bath, with the first impinger acting as a condensate reservoir. The second and fourth impingers are dry and the third impinger contains 100 ml of 0.1 N NaOH for HCl collection. The fifth contains a known amount of silica gel. The impingers are followed by a pump, a dry gas meter, and a calibrated orifice.

A leak check of the entire sampling train will be conducted prior to and at the conclusion of each sampling run, as well as before and after changing or disconnecting any components of the train during the run. Leak checks before and after changing any constituent will be conducted at 15" Hg vacuum to ensure a leak rate of not more than 0.02 ft^3/min. Leak checks conducted at the end of a run and prior to making any component changes or disconnections to facilitate recovery will be at or above the highest vacuum obtained during the run. The pitot tube assembly will also be checked for leaks prior to and after each sampling run to ensure validity of the velocity data.

Recovery procedures for this system are summarized in Table 3.5.2-1

3.5.3 Stack Gas Sampling for Particulates and Metals (Except As, Be, Hg, and Pb)

A U.S. EPA Modified Method 5 (MM5-M) sampling train will be used to sample simultaneously for particulates and metals, except arsenic, beryllium, mercury, and lead. Sampling will be isokinetic (± 10%) with readings of the flue gas parameters recorded at each sampling point. A schematic of the MM5-M train is given in Figure 3.5.3-1.

The sample train consists of a glass-lined probe with a stainless-steel button-hook nozzle and attached thermocouple and pitot tubes. After entering the probe, the gas passes through a heated, glass-fiber filter. The filter is

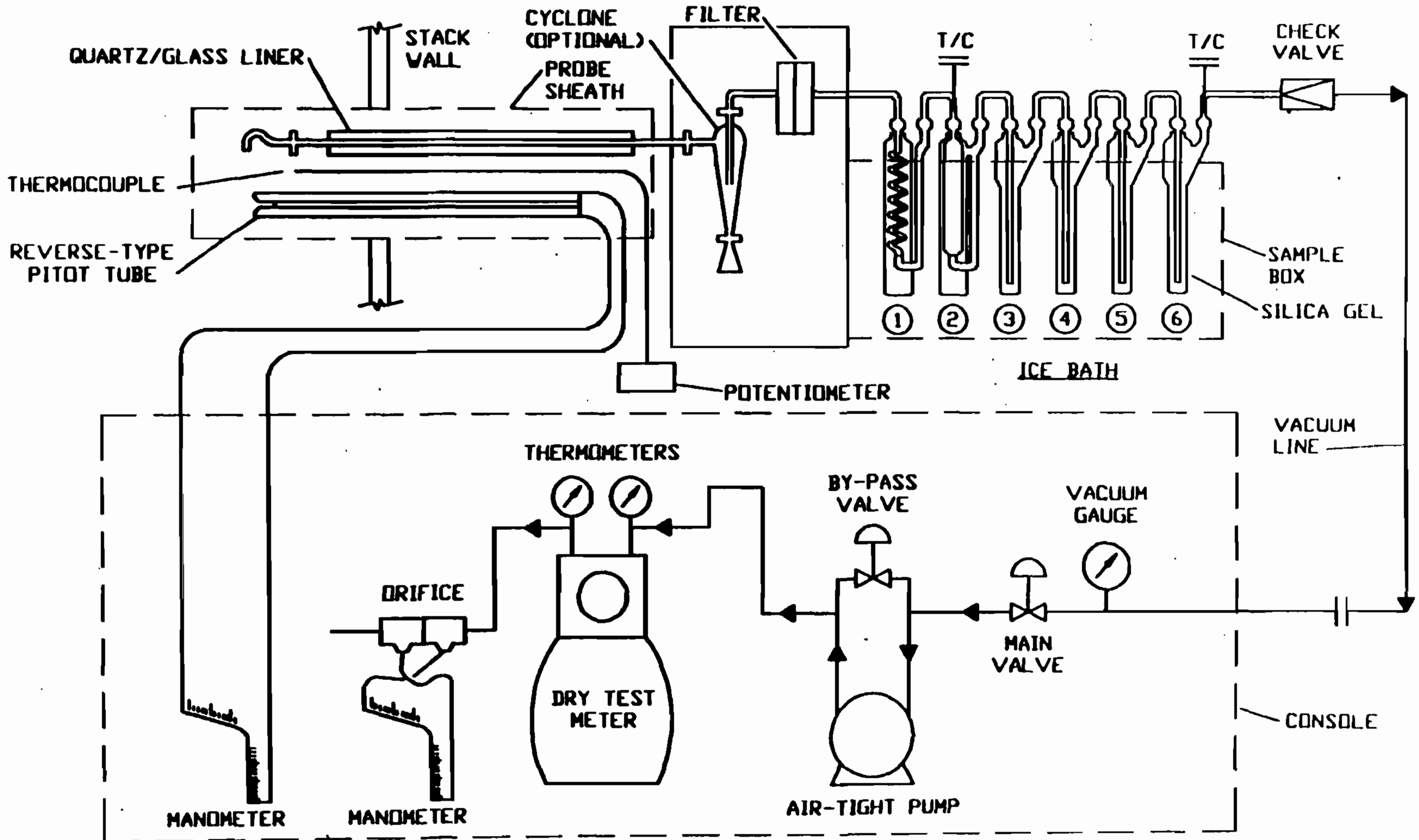
TABLE 3.5.2-1

SAMPLE RECOVERY PROCEDURES

Sample Container	Sample/Procedure
MM5-P Sampling Train	
1	Filter: Remove the filter with Teflon-coated or stainless steel forceps and place in a labeled glass petri dish.
2	Front-half Rinse: Triple-rinse and brush the probe nozzle, probe and all glassware up to and including the front half of the filter with acetone. Place the rinse in the sample container.
3	Condensate HCl Aliquot: Weigh the condensate impinger and remove a 25 ml aliquot sample from the condensate for HCl analysis.
4	Condensate: Transfer the remaining condensate to the sample container and rinse the impinger with measured amounts of acetone.
5	Na_2CO_3 HCl Aliquot: Weigh the Na_2CO_3 impinger and remove a 25 ml aliquot sample from the impinger solution for HCl analysis.
6	Na_2CO_3: Weigh the Na_2CO_3 and dry impingers and transfer contents to sample container. Rinse the impingers with a measured amount of DOW.

FIGURE 3.5.3-1

MM5-M SAMPLING TRAIN FOR PARTICULATES AND METALS (EXCEPT As, Be, Hg, and Pb)



① Modified Greenburg-Smith, Condensate (50 mL H_2O)
② Greenburg-Smith, HNO_3/H_2O_2 (50 mL of HNO3/10 % H_2O_2)
③ Modified Greenburg-Smith, HNO_3/H_2O_2 (50 mL of HNO3/10 % H_2O_2)
④ Modified Greenburg-Smith, $KMnO_4/H_2SO_4$ (50 mL of 1.5% $KMnO_4$/10% H_2SO_4)
⑤ Modified Greenburg-Smith, empty
⑥ Modified Greenburg-Smith, Silica Gel

followed by a series of six impingers in an ice bath, with the first impinger acting as a condensate reservoir. The second and third impingers each contain 50 ml of HNO_3/10% of H_2O_2. The fourth impinger contains 50 ml of 1.5% $KMnO_4$/ 10% H_2SO_4. The fifth impinger is empty and the sixth impinger contains a known amount of silica gel. The impingers are followed by a pump, a dry gas meter and a calibrated orifice.

A leak check of the entire sampling train will be conducted prior to and at the conclusion of each sampling run, as well as before and after changing or disconnecting any components of the train during the run. Leak checks before and after changing any constituent will be conducted at 15" Hg vacuum to ensure a leak rate of not more than 0.02 ft^3/min. Leak checks conducted at the end of a run and prior to making any component changes or disconnections to facilitate recovery will be at or above the highest vacuum obtained during the run. The pitot tube assembly will also be checked for leaks prior to and after each sampling run to ensure validity of the velocity data.

Recovery procedures for this system are summarized in Table 3.5.3-1.

3.5.4 Stack Gas Sampling for Arsenic, Beryllium, Lead, and Mercury

Incinerator stack gas, spray dryer makeup water, and other process waste streams will be sampled as specified in the Trial Burn Plan during trial burn tests two and three to determine the feed rates, emissions, and removal efficiency of the incinerator and air pollution control system for each listed metal.

Samples of stack gases will be collected during the trial burn tests to analyze the concentrations of arsenic, beryllium, lead, and mercury emissions

TABLE 3.5.3-1

SAMPLE RECOVERY PROCEDURES

Sample Container	Sample/Procedure
MM5-M Sampling Train	
1	Filter: Remove the filter with Teflon-coated forceps and place in a labeled glass petri dish.
2	Front-half Rinse: Triple-rinse and brush the probe nozzle, probe and all glassware up to and including the front half of the filter with acetone. Place the rinse in the sample container.
3	Condensate: Transfer the condensate to a sample container. Rinse the impinger with 0.1 HNO_3 and add to the condensate. Adjust pH to < 2 as needed.
4	HNO_3/H_2O_2 Impingers: Weigh both impingers and transfer contents to the sample container. Rinse with 0.1 HNO^3 and add to the contents. Adjust pH to < 2 as needed.
5	$KMnO_4/H_2SO_4$ Impingers: Weigh the impinger and transfer contents to sample container.
	At the laboratory, the samples will be first used to determine particulate weight (filter and probe rinse) and then will be analyzed for metals.

from the incinerator using EPA Methods 108, 104, 12, and 101A respectively. All these methods use sampling trains similar to EPA Method 5. The samples will be analyzed in a FDER-approved laboratory. The Method 5 sampling train components consist of a stainless steel or glass probe nozzle with an angle of taper not greater than 30°, a heat-traced probe liner made of borosilicate or quartz glass tubing, a high-efficiency glass fiber filter supported on a glass frit mounted in a glass holder, followed by an impinger train or an equivalent condenser, a flow control module containing a leakless vacuum pump, a dry gas meter, an orifice meter and appropriate valves, gauges, and associated hardware to enable control and monitoring of the gas sampling rate. The EPA Method 5 sampling train is shown in Figure 3.5.4-1.

While the sampling trains used during these for metals tests methods are very similar, the impinger set-ups will vary considerably. Table 3.5.4-1 shows the impinger set-up for each of these five methods. The following subsections highlight the important details of each of these methods and the sample recovery procedures.

3.5.4.1 EPA Method 5 Sampling Train

In the EPA Method 5 sampling train (which is the basic set up for methods 108, 104, 12, and 101A), samples of stack gas for analyzing metal emissions present in the stack gas will be obtained by withdrawing the metal emissions from the stack isokinetically and collecting on a glass fiber filter maintained at a temperature in the range of 124±14°C (248±25°F). The impingers will meet the following requirements:

FIGURE 3.5.4-1

EPA METHOD 5 SAMPLING TRAIN FOR PARTICULATE EMISSIONS

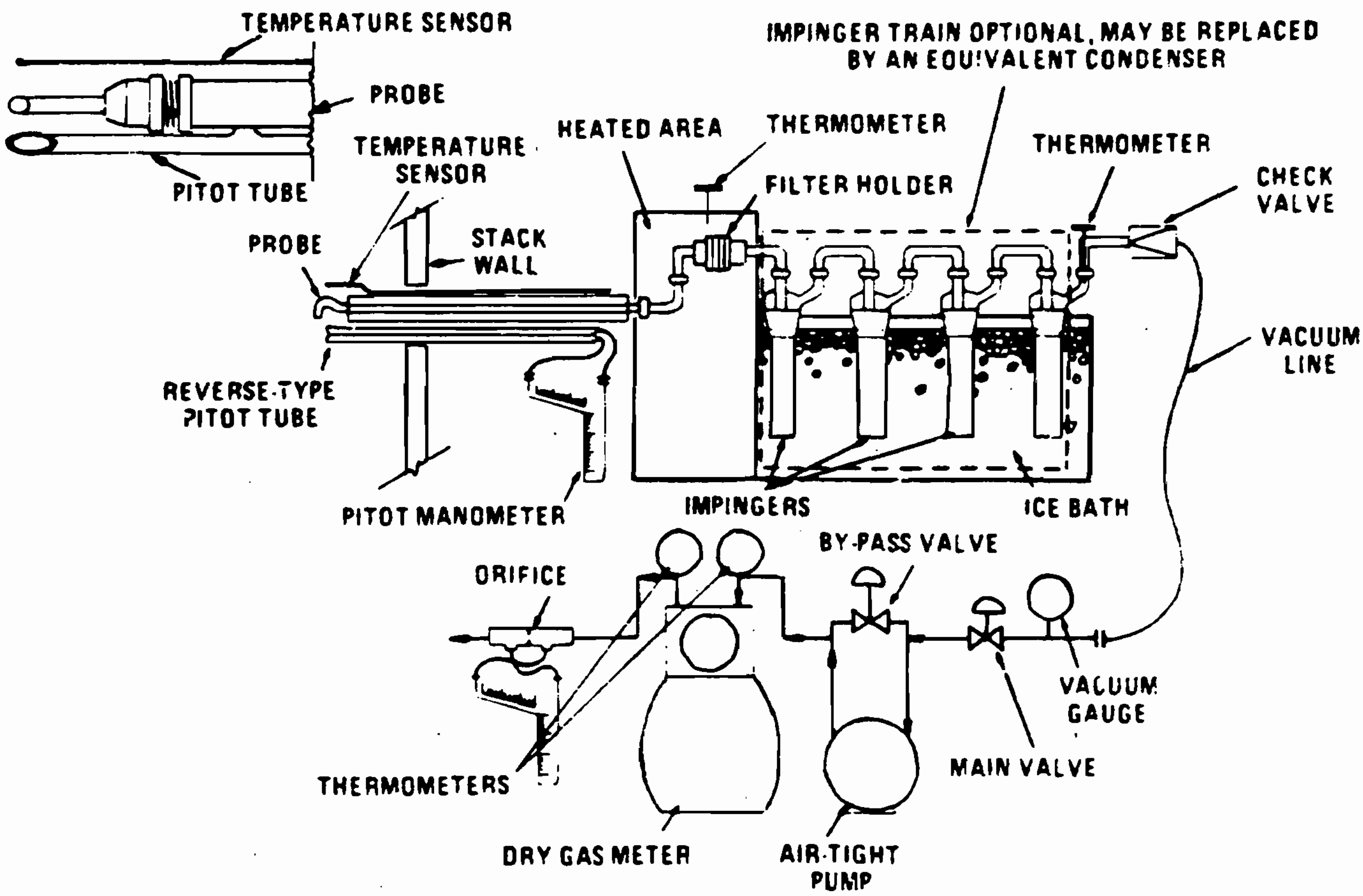


TABLE 3.5.4-1

IMPINGER SET UP FOR THE EPA SAMPLING METHODS

EPA Sampling Method	Impinger Set-Up
Method 5	Impinger one: 100 ml of water Impinger two: 100 ml of water Impinger three: Empty Impinger four: 200-300 grams of preweighed silica gel
Method 12	Impinger one: 100 ml of 0.1 N nitric acid Impinger two: 100 ml of 0.1 N nitric acid Impinger three: Empty Impinger four: 200-300 grams of preweighed silica gel
Method 101A	Impinger one: 50 ml of 4% potassium permanganate Impinger two: 100 ml of 4% potassium permanganate Impinger three: 100 ml of 4% potassium permanganate Impinger four: 200 grams of preweighed silica gel
Method 104	Impinger one: 100 ml water Impinger two: 100 ml water Impinger three: empty Impinger four: 200 grams preweighed silica gel
Method 108	Impinger one: 100 ml water Impinger two: 100 ml water Impinger three: Empty Impinger four: 200-300 grams preweighed silica gel

- The first, third, and fourth impingers will be the modified Greenburg-Smith design. The modification consists of replacing the tip (nozzle/plate assembly) with a 1/2" diameter glass tube.

- The second impinger will be the standard Greenburg-Smith tip design.

Because of the potential for contamination from the use of silicone sealant grease, all glass-to-glass connections will be made without the use of sealant grease. Screw-on connectors or a similar approach will be used.

The equipment will be calibrated, checked for proper operation, and cleaned for use prior to arrival on site.

At a minimum the following equipment will be calibrated:

- Probe nozzles;
- Pitot tube;
- Dry gas meter/orifice;
- Stack gas thermocouple;
- Probe heating system;
- All temperature gauges (in-stack and dial thermometers).

Copies of all calibration data will be placed in the project calibration data file and will be submitted with the final report.

All surfaces in the Method 5 sampling trains that will come into contact with the sample gas stream will be thoroughly cleaned. The cleaning procedure is as follows:

Scrub and soak in hot, soapy water;

- Hot water rinse;
- Distilled water rinse;

- Acetone rinse; and
- Air dry or bake in 100°C oven until dry.

All other components will be cleaned and prepared in accordance with Method 5 procedures. To minimize the potential for contamination of sampling train glassware, all glassware components will be sealed with acetone-rinsed aluminum foil prior to being packed for storage and transport. All remaining sampling train components will be cleaned and maintained (including conducting leak checks) in accordance with routine Method 5 procedures.

All glassware, rinse bottles and associated apparatus used for in-field sampling and recovery will be thoroughly cleaned and conditioned. This includes a final rinse with acetone. Rinse bottles used will be made of Teflon (or equivalent). No non-Teflon plastic components will be used. All sample containers will be glass with Teflon-lined lids.

Quartz fiber filters will be used. Identification numbers will not be stamped on these filters. The filters will be placed in glass petri dishes which are marked with an identification number.

All sample bottles required for recovery of the Method 5 samples will be amber glass bottles or clear glass bottles wrapped in aluminum foil with Teflon-lined lids. Bottles are required for rinse the various components of the sampling train. Sample recovery procedures for the Method 5 system are summarized in Table 3.5.4.1-1.

3.5.4.2 Sampling Method for Arsenic

The arsenic concentration in the stack gases will be analyzed during the trial burn tests two and three using the EPA Method 108 sampling procedure.

TABLE 3.5.4.1-1

SAMPLE RECOVERY PROCEDURES FOR EPA SAMPLING METHOD FOR PARTICULATE MATTER

Sample Container	Sample/Procedure
Method 5 Sampling Train	
1	Filter: Recover the filter with Teflon-coated or stainless steel forceps and place in a labeled glass petri dish. Use a Nylon brush to remove any particulate matter still adhering to the filter. Place all these in Sample Container 1.
2	Front-half rinse: Triple rinse and brush the exterior of the probe nozzle, probe fitting, probe liner and front half of the filter holder with acetone or distilled water. Collect all the rinse liquid in Sample Container 2.
	Probe nozzle: Remove the probe nozzle and clean the inside surface with acetone while brushing with a Nylon bristle brush. Remove the particulate matter from the brush by rinsing it with acetone. Collect all the rinse liquid in Sample Container 2.
	Probe fitting: Brush (with a Nylon bristle brush) and rinse the inside of the fitting with 0.1 N nitric acid. Recover the particulate matter from the brush and collect all the rinse liquid in Sample Container 2.
	Probe liner: Clean the inside of the liner by rinsing using acetone followed by brushing. Recover all the particulate matter from the brush by rinsing with acetone and collect the rinse liquid in Sample Container 2.
N/A	Impingers: Measure the liquid collected in the first three impingers. Keep this liquid if further analyses for other contaminants are required.
3	Note the color of the spent silica gel in the fourth impinger and transfer it to its original container (Sample Container 3).
	Place all sample containers in an iced cooler for transport to the laboratory.

The sampling train used in this method is very similar to the train used in EPA Method 5.

During this test, particulate and arsenic emissions are withdrawn from the stack isokinetically and collected on a glass mat filter and in water. The collected arsenic is then analyzed by means of atomic spectrophotometry.

The impingers used are the modified Greenburg-Smith type for the first, third, and fourth, and the standard Greenburg-Smith type for the second.

All glassware will be cleaned in accordance with the procedures given in EPA Method 5. The sample recovery steps are presented in Table 3.5.4.2-1.

3.5.4.3 Sampling Method for Beryllium

EPA Method 104 will be followed during the trial burn tests two and three to analyze the concentration of beryllium in the stack gases. This method uses the same sampling train as the EPA Method 5. In this method, the sample is collected isokinetically and is digested in an acid solution and analyzed by atomic absorption spectroscopy. The impingers used are the standard Greenburg-Smith type.

Most of the pre-test preparation steps for Method 104 are similar to the EPA Method 5 preparation steps. All glassware (probe, impingers, and connectors) will be cleaned by first soaking in 50% by volume hydrochloric acid, followed by rinsing in water. The sample recovery steps are similar to the EPA Method 5 steps. The rinse liquids used are acetone and deionized distilled water. The samples containers will be placed in an iced cooler for transport to the laboratory.

TABLE 3.5.4.2-1

SAMPLE RECOVERY PROCEDURES FOR EPA SAMPLING METHOD FOR ARSENIC

Sample Container	Sample/Procedure
Method 108 Sampling Train	
1	Filter: Place the filter and other loose particulate matter in a 150-ml beaker. Use 0.1 N sodium hydroxide solution for rinsing.
2	Probe: Wash the probe with 0.1 N sodium hydroxide solution. Filter this solution using a glass filter. To the filtrate add enough water to obtain a 200 ml solution. Pipet 50 ml into a beaker and add 10 ml of concentrated nitric acid, bring to a boil and evaporate to dryness. Allow to cool, add 5 ml of 50% nitric acid, and then warm and stir. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute with water, and mix well. Combine the spent filter to the contents of Sample Container 1. Add 50 ml of 0.1 N sodium hydroxide solution, stir, and warm on a hot-plate at low heat (without boiling) for 15 minutes. Add 10 ml of concentrated nitric acid, bring to a boil, then simmer for about 15 minutes. Filter the solution through a glass fiber filter. Wash with hot water, and catch the filtrate in a 150 ml beaker. Boil the filtrate and evaporate to dryness. Cool, add 5 ml of 50% nitric acid, and then warm and stir. Allow to cool. Transfer to a 50 ml volumetric flask, dilute to volume with water and mix well.
3	Note the color of the spent silica gel in the fourth impinger and place it in Sample Container 3.
4	Impingers: Clean each of the first two impingers (and also the third impinger if any liquid is collected in it) with 0.1 N sodium hydroxide solution and thoroughly and collect the material in Sample Container 4.

TABLE 3.5.4.2-1 (Continued)

Sample Container	Sample/Procedure
Method 108 Sampling Train	
	Transfer the contents of Sample Container 4 into a 500-ml flask and dilute to exactly 500 ml with water. Pipe 50 ml of the solution into a beaker. Add 10 ml of concentrated nitric acid, bring to a boil, and evaporate to dryness. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute to volume with water, and mix well. Place all the prepared sample containers in a iced cooler for transportation to the laboratory.

3.5.4.4 Sampling for Lead

Samples of stack gas for analyzing inorganic lead present in the stack gas will be collected and analyzed using EPA Method 12 during trial burn tests two and three. In this method, particulate and gaseous lead are withdrawn isokinetically from the stack and collected on as filter and in dilute nitric acid. The collected samples are digested in acid solution and analyzed by atomic absorption spectrometry using an air acetylene flame.

All the other procedures and practices such as equipment preparation and calibration are similar to those employed in EPA Method 5. In addition to calibrating the probe nozzle, pitot tube, metering systems, and gauges, the spectrophotometer will also be calibrated. The sample recovery procedures are presented in Table 3.5.4.4-1.

3.5.4.5 **Sampling For Mercury**

The concentration of mercury in the stack gases will be analyzed during the trial burn tests two and three using the EPA Method 101A which is the prescribed method for measuring the levels of mercury from sewage sludge incinerators. This method uses a sampling train similar to the EPA Method 5 with the exception of the filter. A filter may be used if it is suspected that the gas stream will contain large quantities of particulate matter. If the filter is used, probe and filter heating systems must be used to minimize condensation of gaseous mercury. In this method, particulate and gaseous mercury emissions are withdrawn isokinetically from the stack and collected in acidic potassium permanganate solution. The mercury collected in the mercuric

TABLE 3.5.4.4-1

SAMPLE RECOVERY PROCEDURES FOR EPA SAMPLING METHOD FOR LEAD

Sample Container	Sample/Procedure
<u>Method 12 Sampling Train</u>	
1	Filter: Recover the filter with Teflon-coated or stainless steel forceps and place in a labeled glass petri dish. Use a Nylon brush to remove any particulate matter still adhering to the filter. Place all these in Sample Container 1.
2	Front-half rinse: Triple rinse and brush the exterior of the probe nozzle, probe fitting, probe liner and front half of the filter holder with 0.1 N nitric acid solution. Collect all the rinse liquid in Sample Container 2.
	Probe nozzle: Remove the probe nozzle and clean the inside surface with acetone while brushing with a Nylon bristle brush. Remove the particulate matter from the brush by rinsing it with acetone. Collect all the rinse liquid in Sample Container 2.
	Probe fitting: Brush (with a Nylon bristle brush) and rinse the inside of the fitting with 0.1 N nitric acid. Recover the particulate matter from the brush and collect all the rinse liquid in Sample Container 2.
	Probe liner: Clean the inside of the liner by rinsing using 0.1 N nitric acid followed by brushing. Recover all the particulate matter from the brush by rinsing with 0.1 N nitric acid and collect the rinse liquid in Sample Container 2.
3	Note the color of the spent silica gel in the fourth impinger and transfer it to its original container (Sample Container 3).
4	Impingers: Transfer the liquid collected in the first three impingers into a 500-ml graduated cylinder (Sample Container 4).
	Place all sample containers in an iced cooler for transport to the laboratory.

form is reduced to elemental mercury, which is then aerated from the solution into an optical cell and measured by atomic absorption spectrophotometry.

All glass components will be cleaned by rinsing with 50% nitric acid, tap water, 8 N hydrochloric acid, and finally deionized distilled water (DDW).

In addition to calibrating the flow measuring devices and other gauges, the following will be calibrated in accordance with the recommended procedures:

- Optical cell heating system
- Spectrophotometer and recorder

The sample recovery procedures are presented in Table 3.5.4.5-1.

3.5.4.6 Multiple Metals Method (MMM) for total particulates and Metals

EPA is presently developing a methodology and sampling train for the determination of emissions of total particulate and metals from stationary source combustion processes. This method, referred to as the Multiple Metals Method (MMM) will be applicable to determination of total chromium (Cr), cadmium (Cd), arsenic (As), beryllium (Be), barium (Ba), lead (Pb), antimony (Sb), mercury (Hg), silver (Ag), and thallium (Tl). If the MMM is fully developed and approved by EPA prior to the scheduling of the trial burn and is also approved by FDER, this method will be used in place of MM5-M and methods 12, 101A, 104, and 108 for determination of metals emissions and total particulate emissions from the incinerator.

TABLE 3.5.4.5-1

SAMPLE RECOVERY PROCEDURES FOR EPA SAMPLING METHOD FOR MERCURY

Sample Container	Sample/Procedure
<u>Method 101A Sampling Train</u>	
1	Probe, Nozzle, Liner, and Filter Holder: Rinse these components with a total of 250 to 400 ml of fresh 4% potassium permanganate solution, and collect all the rinse liquid in Sample Container 1. Remove any brown deposits on the glassware using the minimum amount of 8 N hydrochloric acid solution and collect it in Sample Container 1.
	Impingers: Collect the liquid from the first three impingers in the Sample Container 1.
	Filter the contents of Sample Container 1 through Whatman 40 filter paper to remove the brown manganese dioxide precipitate. Wash the filter with 50 ml of 4% potassium permanganate absorbing solution and add this to the filtrate.
2	Note the color of the spent silica gel in the fourth impinger and transfer it to its original container (Sample Container 2).
3	Filter: Carefully remove the filter and place it in Sample Container 4, and add 20 to 40 ml of 4% potassium permanganate solution. Transfer any particulate matter that has adhered to the filter holder gasket using a Nylon bristled brush.
4	Treat a blank filter in the same manner as the filter above and collect the contents in Sample Container 4.

Sample Container	Sample/Procedure
<u>Method 101A Sampling Train</u>	
	Place the contents of Sample Containers 3 and 4 in separate beakers and heat the contents on a steam bath. Do not let it dry. Add 20 ml of concentrated nitric acid to the beakers, cover them, and heat on a hot plate at 70°C for 2 hours. Remove from the hot plate and filter the solution through Whatman No. 40 filter paper and save the filtrate for further analysis.
5	Take 500 ml of 4% potassium permanganate solution in Sample Container 5.
	Treat this solution in the same manner as the contents of Sample Container 1 were treated. Combine the filtrate with the filtrate in Sample Container 4.
	Place all sample containers in an iced cooler for transport to the laboratory.

3.6 STACK GAS SAMPLING FOR OXYGEN AND CARBON DIOXIDE

Samples for the determination of CO_2 and O_2 composition of the stack gas will be collected using the technique detailed in U.S. EPA Reference Method 3. The analysis of the collected samples will be conducted using an Orsat gas analyzer in accordance with the method. Alternatively, a non-dispersive infrared (NDIR) analyzer with chart recorder may be used for continuous CO_2 monitoring, and a paramagnetic analyzer with chart recorder may be used for continuous O_2 monitoring. The sample will be taken from a connection at the exhaust from the MM5 sampling console. This provides a sample from which particulate and moisture have already been removed in the MM5 train, and automatically provides a multipoint integrated sample. Figure 3.6-1 is a schematic of the sampling system. The integrated sample will be taken over the entire 3-hr sampling period, simultaneously with the MM5 sampling.

3.7 CONTINUOUS MONITORING FOR CARBON MONOXIDE AND TOTAL HYDROCARBONS

A continuous monitoring system will be used to measure CO concentrations throughout each test run in accordance with U.S. EPA Method 10. The monitoring system shown in Figure 3.7-1 will be equipped with a gas conditioning system and continuous chart recorders. The flue gas will be extracted from the stack location and drawn through a conditioning system to concentration will be determined using an NDIR continuous analyzer. The monitor will be calibrated with zero gas (nitrogen) and two certified span gases prior to and at the conclusion of each test run. The data will be corrected for instrument drift (if any) and reduced to 15-minute averages. The maximum and minimum values will be reported for each test period.

FIGURE 3.6-1

INTEGRATED GAS BAG SAMPLER FOR OXYGEN AND CARBON DIOXIDE SAMPLING

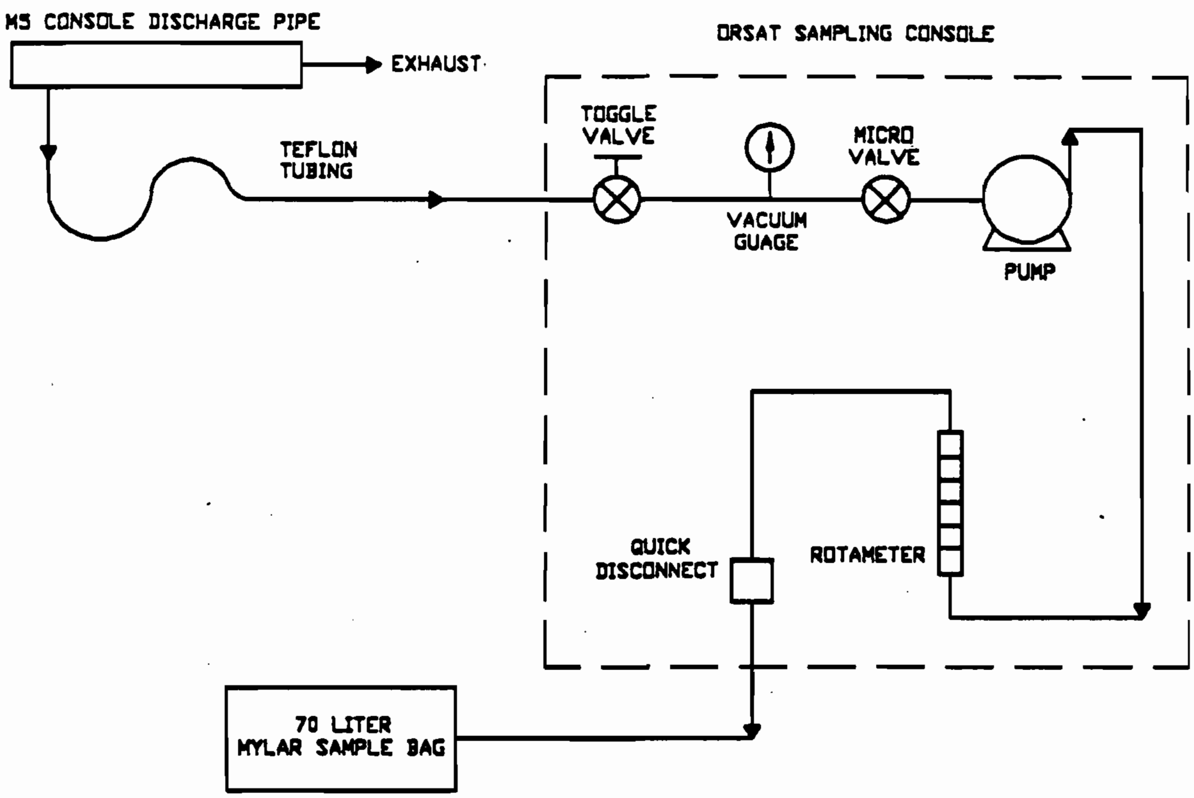
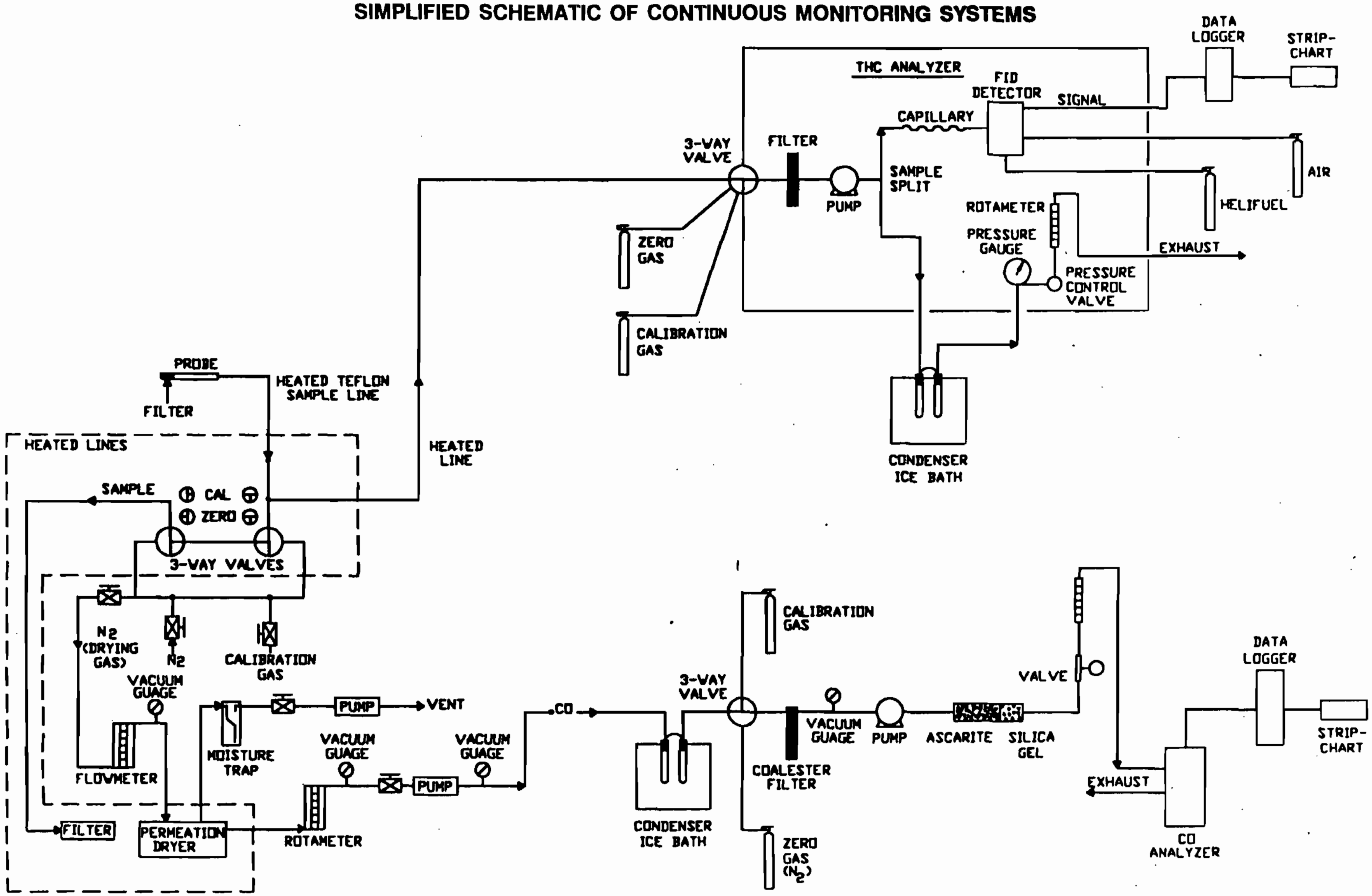


FIGURE 3.7-1

SIMPLIFIED SCHEMATIC OF CONTINUOUS MONITORING SYSTEMS



A continuous emission monitoring system will be used to document THC emissions. The monitoring system will follow guidelines as specified in the EPA Guidance on PIC Controls for Hazardous Waste Incinerators, and related EPA Guidance documents. Briefly, the sample will be extracted from the flue gas stream at a point of average concentration through the stainless-steel probe and glass-fiber filter for particulate removal. The gas will then pass through the heated sample line (to prevent moisture condensation) and be delivered to the monitor for analysis by flame ionization detection (FID). Results will be reported as volume concentration equivalents of propane.

Continuous monitoring of the flue gas will be performed during the entire test period. On each day of flue gas testing, the following sequence of procedures will be implemented:

1. Arrive on site. Inspect equipment condition.

2. Set up and check leak system.

3. Connect analyzer to strip-chart recorder.

4. Perform initial calibration of monitor with zero gas (nitrogen) and three concentrations of certified calibration gas (approximately 20%, 50% and 90% of full scale). Note and make any adjustments on the monitor.

   NOTE: All calibration gases will be introduced upstream of the sample conditioning system.

5. Monitor THC and CO throughout flue gas test period marking strip chart and noting beginning and end of test runs.

6. At end of run, recalibrate monitor and note all values on appropriate data sheet to determine monitor drift.

7. Reduce and present as 15-minute averages the strip-chart recordings.

4.0 SAMPLE PREPARATION AND ANALYSIS PROCEDURES

This section describes the procedures that will be used to handle, prepare and analyze the samples collected during the trial burn. If these procedures have to be modified to accommodate sample preparation or analytical problems, such modifications will be documented and explained in the report on the trial burn results. All referenced analyses will be performed by an analytical laboratory with a QA/QC plan approved by FDER. Specific QA/QC procedures are discussed in section 6.0.

4.1 SAMPLE HANDLING PROCEDURES IN THE FIELD

All samples will be sealed, labeled, and placed with ice in insulated containers for transport to the laboratory. Waste feed and fuel samples, residual solid samples, stack gas MM5 samples, stack gas metal samples, SDA lime slurry and makeup water samples, and stack gas VOST samples will be placed and shipped in separate containers.

4.2 WASTE FEED AND FUEL ANALYSES

4.2.1 Volatile Organic Compounds Analysis

Waste feed samples (liquid, solid, and sludge) from each of the trial burn test runs will be analyzed for a preselected list of volatile organic compounds. This will include analysis for each of the five volatile POHCs present in the feed: carbon tetrachloride, chlorobenzene, tetrachlorethylene, trichlorobenzene, and hexachloroethane. GC methods listed in References 1 and 2 will be evaluated before the test for possible interferences. The method(s) which give the best resolution of the compounds of interest will be used for final analysis. Instrument calibration will generally be provided using each of three dilutions of a stock calibration mixture.

Liquid organic waste samples, which will contain high levels of volatile organics, will be prepared for analysis by solvent dilution in methanol and will be analyzed by direct injection onto a packed column GC/MS. Sludge samples, which likely will contain only trace levels of volatile organics, will be dispersed in methanol or polyethylene glycol and analyzed by purge-and-trap GC/MS techniques. Containerized waste samples, which also will likely contain only trace levels of volatile organics, will be prepared and analyzed in the same manner if the sample is soluble. If the sample is insoluble, alternate methods will be used. Bulk solid samples will not be analyzed for volatile organic compounds because they are not expected to contain detectable amounts of these compounds.

The prepared samples will be analyzed by Method 8240 in Test Methods for Evaluating Solid Wastes, SW-846. The approximate GS/MS instrument operating conditions for the VOST analysis are presented in Table 4.2.1-1.

4.2.2 Semivolatile Organic Compounds Analysis

Containerized waste and sludge samples, which will contain percentage levels of semivolatile POHCs, and fuel samples, which may contain high levels of a wide variety of semivolatile organic compounds, will be prepared for GC/MS analysis by solvent dilution in methylene chloride if the sample is soluble. If the sample is insoluble, it will be prepared by the Soxhlet extraction procedure outlined in SW-846, Method 3540 and then diluted in methylene chloride. Low-Btu liquid waste samples and bulk solid samples will not be analyzed for semivolatile organic compounds because they are not

TABLE 4.2.1-1

APPROXIMATE GC/MS INSTRUMENT OPERATING CONDITIONS FOR VOST ANALYSIS

Thermal Desorption Conditions	
Cartridge desorption temp	225°C
Cartridge desorption time	11 min
Desorption flow rate	40 ml/min
GC/MS Conditions	
Trap Packing	Tenax (60/80 mesh), 3% OV-1 on Chromosorb W (60/80 mesh), silica gel (Davison Grade 15, 335/60 mesh).
Purge and Trap Conditions	
Desorption temp	180°C
Desorption time	4 min
GC Conditions	
Column	1% SP-1000 on Carbopack B, 6 ft x 2 mm ID column
Temp program	60°C held for 0 min, then 8°/min to 220°C and held for 10 min.
Injector temp	175°C
Carrier flow	UHP helium, 30 ml/min
MS Conditions	
Emissions	300 ua
Ionization energy	70 eV.
Scan rate	112.5 amu/sec
Mass interval	35-260 amu.
Reference Compounds	
MS Tune:	Bromofluorobenzene
MS Internal:	Bromochloromethane
Standards:	1,4-difluorobenzene
	Chlorobenzene-d_5
Surrogates:	1,2-dichloroethane - d_4
	Benzene - d_6
	Toluene - d_8
	Bromofluorobenzene

expected to contain detectable amounts of these compounds. Direct burn liquid waste samples will not be analyzed for semivolatile organic compounds, because these samples will be composed exclusively of volatile organic compounds (see Subsection 1.3).

The prepared samples will be analyzed by Method 8270 in Test Methods for Evaluating Solid Wastes, SW-846.

4.2.3 Heating Value Analysis

All waste and fuel samples will be analyzed for higher heating values by ASTM Method D240-73.

4.2.4 Ash Content Analysis

All waste and fuel samples will be analyzed for ash content by ASTM Method D842-80.

4.2.5 Organic Chlorine Analysis

The total chlorine content of the waste feed will be determined by Parr O_2 bomb combustion (Method A-004, Reference 1) followed by chloride analysis (ASTM D512-81). Sample preparation will proceed in accordance with ASTM D808. All waste and fuel samples will be analyzed for organic chlorine content by ASTM Method E-442. If the results show that the chloride content is less than 2% and if the sample is organic, it will be analyzed by ASTM Method D808-81 and then ASTM Method D4327-84. If the results show that the chloride content is less than 2% and if the sample is non-organic, it will be analyzed by ASTM Method D4327-84.

TABLE 4.2.3-1

ANALYSES OF PHYSICAL CHARACTERIZATION
OF WASTE FEED SAMPLE

ANALYSIS	METHOD
Ultimate Analysis	ASTM D3178
Viscosity	ASTM D445
Ash	ASTM D874
Higher Heating Value	ASTM D240
Density	ASTM D1298
Elemental Analysis	A003, Reference 1

The Parr oxygen bomb method involves the oxidation of the feed sample by combustion in a bomb containing oxygen under pressure. The chlorine compounds thus liberated are absorbed in a sodium carbonate solution. Carbonate solutions and bomb rinsings are reduced to approximately 75 ml and brought to 100 ml final volume prior to quantitation.

4.3 WASTE FEED, FUEL, ASH, STACK GAS, AND RESIDUAL SOLIDS ANALYSIS FOR METALS

All waste and fuel samples, the kiln ash and air pollution control system dried solids samples, and the MM5-M and EPA reference Methods 108, 104, 101A, and 12 stack gas samples collected during the trial burn tests two and three will be analyzed for metals. The waste, fuel, ash, and dried solids samples will be digested in accordance with the atomic absorption portion of Method 3050 of SW-846 to prepare them for analysis by ICAP, CVAA, or GFAA. For the kiln ash samples, the digestion by Method 3050 will be only a leach of the sample, not a complete digestion, due to the nature of the sample. If any of the liquid samples are biphasic, the phases will be separated and will be digested and analyzed separately. If any of the samples or sample phases are of an organic nature and are not amenable to Method 3050 digestion, then organic dissolution by Method 3040 will be used to prepare the sample or phase for analysis.

Samples 1 through 4 from the MM5-M sampling (see Table 2.3-1) will be weighed, combined and reduced to less than 100 ml by heating. This combined sample and sample 5 from the MM5-M sampling then will be digested by the atomic absorption portion of Method 3050 to prepare them for analysis by ICAP, CVAA, or GFAA. The various metals to be analyzed are listed in Table 4.3-1.

TABLE 4.3-1

METALS TO BE ANALYZED IN STACK GAS PARTICULATE AND METALS SAMPLES

CONSTITUENT	REFERENCE METHOD
Antimony	EPA Modified Method 5 or EPA MMM
Arsenic	EPA Method 108 or EPA MMM
Barium	EPA Modified Method 5 or EPA MMM
Beryllium	EPA Method 104 or EPA MMM
Cadmium	EPA Modified Method 5 or EPA MMM
Chromium	EPA Modified Method 5 or EPA MMM
Lead	EPA Method 12 or EPA MMM
Mercury	EPA Method 101A or EPA MMM
Silver	EPA Modified Method 5 or EPA MMM
Thallium	EPA Modified Method 5 or EPA MMM

Following preparation, the samples will be analyzed for six of the ten metals that EPA is proposing to regulate under 40 CFR Part 264. These metals are: antimony, barium, cadmium, chromium, silver and thallium. The analyses will be by inductively coupled argon plasma atomic emission spectrometry (ICAP) or graphic furnace atomic absorption spectrometry (GFAA) in accordance with Method 6010 of SW-846. Arsenic, lead, mercury, and beryllium will be determined by EPA Methods 108, 12, 101A and 104 or equivalent EPA and FDER approved methods.

4.4 ASH AND STACK GAS ANALYSIS FOR SEMIVOLATILE ORGANIC COMPOUNDS

The MM5-0 stack gas samples and the ash samples will be spiked with internal standards, Soxhlet extracted with toluene (or methylene chloride in the case of the MM5-0 condensate sample), composited and concentrated by rotary and nitrogen evaporation in accordance with Method 8280 of SW-846 to prepare them for GC/MS analysis. After rotary evaporation, the extracts from the Test 2 MM5-0 samples will be split so that one half can be further prepared and analyzed for semivolatile organic compounds and the other can be further prepared and analyzed for PCDDs and PCDFs.

The extracts will be analyzed for semivolatile POHCs by HRGC/MS in accordance with Method 8370 of SW-846.

One half of the extract for the trial burn test two MM5-0 samples will be subjected to column cleanup and analyzed for tetra- through octa-polychlorinated dibenzodioxins (PCDDs), tetra- through octa-polychlorinated dibenzofurans (PCDFs), and 2,3,7,8-TCDD and 2,3,7,8-TCDF using the draft ASME protocol: Analytical Procedures to Assay Stack Effluent Samples and Residual Combustion Products for Polychlorinated Dibenzo-p-dioxins (PCDD) and Polychlorinated Dibenzofurans (PCDF), September 18, 1984. Some minor changes may be made in the procedure, but these will be documented in the report on the analytical results.

4.5 STACK GAS ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

The samples for VOCs will be obtained from the VOST train. The various volatile organic compounds to be analyzed are listed in Table 4.5-1. All analytical procedures and the associated QA/QC requirements will follow the EPA VOST protocol. A brief description is given here.

The Tenax and Tenax/charcoal samples generated from each run will be analyzed by thermal desorption GC/MS procedures. Flow from the desorption unit will be directed through the purge chamber of a purge-and-trap sample concentrator onto a GC/MS operating under the conditions listed in Table 4.2.1-1. Internal standards will be used as specified in the EPA VOST protocol.

All calibrants will be introduced using a gas-tight syringe containing varying amounts of mixed-stock standard spikes onto blank Tenax tubes. A minimum of three calibration standards will be analyzed prior to sample analysis. Linear regression plots of total nanograms per tube versus response will be made to calculate sample concentrations. A check standard will be analyzed on a daily basis to check the original calibration curve.

Standard operating procedures require that the GC/MS be tuned daily to criteria established for bromofluorobenzene as specified in EPA Method 624.

4.6 STACK GAS ANALYSIS FOR SEMIVOLATILE ORGANIC COMPOUNDS

The samples for semivolatile organic compounds will be obtained from the MM5 sampling train. The various semivolatile organic compounds to be analyzed

TABLE 4.5-1

VOLATILE ORGANIC COMPOUNDS TO BE ANALYZED IN STACK GAS VOST SAMPLES

Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethyl benzene
Methylene chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane

are listed in Table 4.6-1. All analytical procedures and the associated QA/QC requirements will follow SW-846.

Upon receipt in the laboratory, the MM5-O samples will be removed from the insulated containers and will be placed in cold storage (<4°C). The MM5-O samples will consist of the following:

- Filter;
- Sorbent trap;
- Front-half organic rinse;
- Back-half organic rinse; and
- Condensate (first and second impinger contents and rinse).

The filter and XAD-2 resin will be extracted with methylene chloride using Soxhlet extractors. The front-half and back-half organic rinses are added to the filter and XAD-2 resin fractions, respectively, either before or after extraction, depending upon whether particulate matter is present. The condensate is also extracted with methylene chloride.

The combined extracts are cleaned up using adsorbent chromatography, as required, concentrated and submitted for GC/MS analysis. Analysis for the MM5 semivolatile organic compounds will be by GC/MS using a 15- to 30-m fused silica capillary column.

4.7 STACK GAS ANALYSIS FOR PARTICULATE

The MM5-P and MM5-M train samples will be submitted to the analytical laboratory for particulate and HCl analysis. Each MM5 train will comprise two discrete types of samples: particulate filter and probe rinses, and impingers/condensates. Prior to any actual HCl analysis, the particulate samples will be submitted for gravimetric analyses. This will entail

TABLE 4.6-1

SEMIVOLATILE ORGANIC COMPOUNDS TO BE ANALYZED IN STACK GAS SAMPLES

1,2,4-Trichlorobenzene

Hexachloroethane

Polychlorinated Biphenyls (PCBs)

Polychlorinated Dibenzodioxins (PCDDs)

Polychlorinated Dibenzofurans (PCDFs)

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evaporating the solvent-based probe rinse to dryness, at which time the residue will be weighed and combined with the particulate filter for analysis.

4.8 STACK GAS ANALYSIS FOR HYDROCHLORIC ACID

The impinger solutions resulting from the MM5-P particulate/HCl sampling train will be analyzed for total chloride by means of ASTM D512-81. Samples will be directly injected into the sample loop with no prior treatment other than dilution where necessary. Sample chromatograms will be compared to standard multi-anion calibration chromatograms for the quantitation of chloride as HCl.

4.9 STACK GAS ANALYSIS FOR PCDDS AND PCDFS

One half of the extract for the Test 2 MM5-O samples will be subjected to column cleanup and analyzed for tetra- through octa-polychlorinated dibenzodioxins (PCDDs), tetra- through octa-polychlorinated dibenzofurans (PCDFs), 2,3,7,8-TCDD and 2,3,7,8-TCDF using the draft ASME protocol: Analytical Procedures to Assay Stack Effluent Samples and Residual Combustion Products for Polychlorinated Dibenzo-p-dioxins (PCDD) and Polychlorinated Dibenzofurans (PCDF), September 18, 1984. Some minor changes may be made in the procedure, but these will be documented in the report on the analytical results.

4.10 STACK GAS ANALYSIS FOR OXYGEN AND CARBON DIOXIDE

The integrated gas samples will be analyzed for oxygen and carbon dioxide by an Orsat analyzer in accordance with EPA Reference Method 3, or by a NDIR continuous analyzer.

5.0 DATA REDUCTION AND REPORTING OF RESULTS

Within 90 days after the completion of the trial burn tests, a Trial Burn Report will be submitted to the Florida Department of Environmental Regulation. This report will include all of the data collected during the trial burn tests, the determinations required by Florida statutes, and a certification that the trial burn has been conducted in accordance with this trial burn plan.

5.1 INCINERATOR OPERATING CONDITIONS

A summary of the operating conditions monitored during each trial burn test run (see Table 1.4.1-1) will be included in the report. This summary will list the average, minimum, and maximum values of the monitored operating conditions during each test run. It will include the average, minimum, and maximum values for kiln combustion gas outlet temperatures, SCC combustion gas outlet temperatures, and combustion gas flow rates.

5.2 POHC DESTRUCTION AND REMOVAL EFFICIENCY

The feed rate of each POHC to incinerator during each test run will be determined from the mass waste feed rates and the amounts or concentrations of the POHCs in each waste feed. The emission rate of each POHC from the incinerator during each test will be determined from the volumetric flow rate of stack gas and the concentrations of the POHCs in the stack gas. These results will be used to calculate the DRE for each POHC for each test run using the formula specified in 40 CFR 264.343 and shown in Attachment D-6-1.

5.3 POHC MASS BALANCE

A true mass balance of POHCs during each test run will not be possible. Greater than 99.99 percent of the POHCs are destroyed in the incinerator, and the stack emissions of POHCs will be measured in units of grams per second. As the waste feed rates and ash generation rates will be measured in tons per hour, differences between these values cannot be accurately measured. However, as complete a picture as possible of the fate of all POHCs in each test run will be determined. To accomplish this, the input rates of all POHCs to the incinerator (via waste feeds) during each test run will be determined, and the output rates of all POHCs from the incinerator (via the stack gas emissions and discharges of kiln ash and dried solids from the air pollution control system) during each test run will be determined.

5.4 VOLATILE ORGANIC COMPOUND EMISSIONS

Stack gas emissions (if detectable) of all those volatile organic compounds listed in Table 4.5-1 will be determined for each test run in terms of stack gas concentrations and emission rates.

5.5 SEMIVOLATILE ORGANIC COMPOUND EMISSIONS

Stack gas emissions (if detectable) of all those semivolatile organic compounds listed in Table 4.6-1 will be determined for each test run in terms of stack gas concentrations and emission rates.

5.6 PARTICULATE AND METAL EMISSIONS AND METALS FEED RATES AND CONTROL EFFICIENCIES

The incinerator stack particulate emissions for each test run will be determined. These will be reported in concentrations of grains/dry standard cubic foot, corrected to 7% stack gas oxygen concentration using the formula prescribed in 40 CFR 264.343 and to 50% excess oxygen using the formula prescribed in F.A.C. 17-2.700(6)(a)2.

The stack gas emissions of the following metals will be determined during each of the runs of trial burn tests two and three in terms of stack gas concentrations and emission rates. These metals are: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium. In addition, the total feed rate of each of these metals during each of the trial burn tests two and three runs will be determined and the total control efficiency of the incinerator system for each metal will be calculated. Finally, the concentrations and quantities of each of these metals in the kiln ash and dried solids from the air pollution control system from each of the tests two and three runs will be determined.

5.7 HYDROCHLORIC ACID EMISSIONS

The stack gas HCl emissions, as determined by MM5-O and MM5-P sampling, for each test run will be determined in units of ppm and pounds/hour. In addition, the HCl removal efficiency of the air pollution control system will be determined for each test run. This will be determined from the total mass of organic chlorine (corrected to equivalent HCl) fed to the incinerator in the waste feeds and the total mass of HCl emitted in the stack gas.

5.8 PCDD AND PCDF EMISSIONS

Stack gas emissions of each of the following PCDDs and PCDFs will be determined for the trial burn tests in terms of stack gas concentrations and emission rates:

2,3,7,8-TCDD	2,3,7,8-TCDF
Total tetra PCDDs	Total tetra PCDFs

Total penta PCDDs	Total penta PCDFs
Total hexa PCDDs	Total hexa PCDFs
Total hepta PCDDs	Total hepta PCDFs
Total octa PCDDs	Total octa PCDFs

5.9 CARBON MONOXIDE, CARBON DIOXIDE, THC, AND OXYGEN EMISSIONS

The average, minimum, and maximum concentrations of carbon monoxide and THC in the stack gas, as measured by the continuous CO and THC analyzers, will be reported for each test run. The average concentrations of oxygen and carbon dioxide in the stack gas, as measured by the Orsat analyzer, will be reported for each run. Also, the average, minimum, and maximum concentrations of oxygen in the stack gas, as measured by the continuous oxygen analyzer, will be reported for each run.

5.10 WASTE FEED AND FUEL CHARACTERISTICS

The concentrations of volatile and semivolatile organic compounds, and the heating value, ash content, and organic chlorine content of each waste and fuel feed for each test run, as delineated in Table 4.2.3-1, will be determined. In addition, the metal concentrations in each waste and fuel feed for each of the test runs in trial burn tests two and three will be determined.

5.11 ASH AND DRIED SOLIDS CHARACTERISTICS

The metal concentrations in the kiln ash and air pollution control system dried solids for each of the test runs in trial burn tests two and three will be determined. In addition, the semivolatile organic compound concentrations in the kiln ash for each of the test runs will be determined.

5.12 FUGITIVE EMISSIONS

The internal pressures maintained in the kiln during each of the test runs will be recorded and reported to demonstrate the control of fugitive emissions.

6.0 QUALITY ASSURANCE PLAN

The QA program entails the calibration of all sampling and analytical apparatus where applicable, and the use of control samples and replicate analyses where feasible. The analytical laboratory used to analyze the samples will have a QA/QC plan approved by FDER.

6.1 QUALITY ASSURANCE PROCEDURES

Quality Control Samples

a. Blank Samples. Blanks will be collected in the field for all samples; i.e., acetone rinses, Tenax tubes, and a glass fiber filter. Each blank will undergo the identical treatment and analysis as the corresponding sample. Glass fiber filter analyses will be valid only if the field blank analysis weight is within 0.5 mg of the field blank tare weight.

1. Field-biased Blanks. These are blank samples which have been exposed to field and sampling conditions in order to assess possible contamination from the field. Field-biased blanks will be collected daily for each of the sampling methods.

2. Method Blanks. These are blanks which are processed through the sample preparation procedures to account for contamination introduced in the laboratory. At least one method blank will accompany each set of program samples through the entire analytical scheme.

b. Duplicate Samples. A duplicate sample is a second aliquot of a sample carried through all sample preparation and analysis procedures to verify the precision of the analytical method. At least one sample in each analysis batch of 20 or fewer samples will be analyzed in duplicate.

c. Spiked Samples. At least one sample in each analysis batch of 20 or fewer samples will be spiked with the parameters of interest at a level two to three times the method detection limit. Spiked samples will be carried through the entire preparation and analysis procedure with program samples.

The duplicate and spiked samples may be submitted as known QC samples, termed laboratory control samples (LCSs) or "blind" QC samples which are not recognizable to the analyst. LCSs will be routinely used to ensure that the analytical process is under control.

Reporting Requirements. A final report will be issued documenting the trial burn. This report will contain an introduction, a description of process operations, a description of sampling and analysis techniques, and a summary of test results. All data, as stated in this trial-burn plan, will be discussed in the report. Additional reporting requirements and project deliverables to be included in the final report will include the following items:

- Results of all quality control analyses, including spikes, replicates, and performance check/evaluation samples. Spiked sample data will include nanograms applied and nanograms recovered, as well as percent recovery data.
- Results of all surrogate compound analyses including quantities applied and recovered from every program sample. Percent recovery data for the surrogate compound will also be provided.
- Results of all of the daily performance check samples pertinent to the set of samples submitted for analysis. The performance check solution and the calibration solution data are needed to demonstrate GC/MS resolution, sensitivity, response factor reproducibility, and mass range calibration.
- Copies of actual selected ion current profiles (SICPs) and raw and background subtracted spectra pertinent to each sample.
- Copies of all calibrant response-factor calculations, plotted concentration calibration curves, and computer-derived quantitation reports.
- A chronological list of all analyses performed, including the data system file name, sample number

for each sample, blank, concentration calibration solution, and performance check solution. This will include all labeled peaks, as well as the internal standard and surrogate.

- The accompanying document control and chain-of-custody package will include sample tags, custody records, sample tracking records, analyst log book pages, computer printouts, raw data summaries, and instrument log book pages.

Identification and Treatment of Outliers. Any data point which deviates markedly from others in its data set will be investigated. One or both of the following tests will be used to identify outliers. Dixon's test for extreme observations is an easily computed procedure for determining whether a single very large or very small value is consistent with the remaining data. The one-tailed student's t-test for difference may also be used in this case. It should be noted that these tests are designed for testing a single value.

Since an outlier may result from unique circumstances at the time of sample analysis or collection, those persons involved in the analysis and collection will be consulted. This may provide an experimental reason for the outlier. Further statistical analyses will be performed with and without the outlier to determine its effect on the conclusions. In many cases, two data sets will be reported, one including and one excluding the outlier.

In summary, every effort will be made to include the outlying value in the reported data. If the value is rejected, it will be identified as an outlier, reported with its data set, and its omission noted.

Internal Quality QC. QC checks will be performed to ensure the collection of representative samples by using the proper sampling techniques and the generation of valid analytical results on these samples. These checks will be performed by project participants throughout the program under the guidance of the QA Task Manager. The QC program for the sampling aspects of this program will include the following:

- Equipment Calibration: All sampling equipment (dry gas meters, pitot tubes, thermocouples, etc.) will be calibrated as previously described in this QA plan.

- Use of Designated Sampling Forms: Sample data forms will be developed for all methods and will be completed by personnel collecting the sample to ensure that all pertinent information is recorded.

The quality control program for laboratory analysis will make use of a number of different types of QC samples to document the validity of the generated data. The following types of QC samples will be used routinely:

- Blank Samples

    - Field-biased Blanks: These are blank samples which will have been exposed to field and sampling conditions in order to assess possible contamination from the field. Field-biased blanks will be routinely used when sampling for volatile organics.

    - Method Blanks: These are blanks which will be processed through the sample preparation procedures to account for contamination introduced in the laboratory. One method blank will be prepared with each batch of 20 or fewer samples processed.

    - Calibration Blanks: These are blanks used in instrument calibration. These blanks will contain the reagents used in preparing instrument calibration standards except the parameters of interest.

- Duplicate Samples: A second aliquot of a sample will be carried through all sample preparation and analysis procedures to verify the precision of the analytical method. At least one sample in each analysis batch of 20 or fewer samples will be analyzed in duplicate.

- LCSs: At least one sample in each analysis batch of 20 or fewer samples will be an LCS. The LCS may be an NBS Standard Reference Material, an EPA/EMSL quality control sample, or a project sample spiked with the parameters of interest at a level two to three times the detection limit. These samples will be carried through the entire preparation and analysis procedure with program samples.

- Surrogate Spikes: Samples requiring organic analysis will be routinely spiked using a series of deuterated analogues of the components of interest as surrogates. This will be designed to assess the behavior of actual components in individual program samples during the entire preparative and analysis scheme.

The duplicate and spiked samples or reference materials may also be submitted as "blind" QC samples, those which are not recognizable to the analyst. Blind QC samples will be prepared by the Laboratory QC Coordinator and will be added to the project samples at the time they are received.

- Instrument QC checks and frequency
  - Daily calibration
  - Analyze LCS daily before sample analysis; reported values must be within established control limits
  - Analyze a calibration check sample after every 10 samples; reported value must be within established control limits
- Preparation and analysis procedure QC checks and frequency
  - Method blank with each group of 20 or fewer samples
  - Laboratory control sample and duplicates with each group of 20 or fewer samples

Reagents used in the laboratory will normally be of analytical reagent grade or higher purity. Each lot of acid or solvent used will be checked for acceptability prior to lab use. All reagents will be labeled with the date received and date opened.

Performance and System Audits. The QA program will include both performance and system audits as independent checks of the quality of data obtained from sampling, analysis, and data gathering activities. Every effort will be made to have the audit assess the measurement process in normal operation. Either type of audit may show the need for corrective action.

a. Performance Audits. The sampling, analysis, and data handling segments of a project will be checked in performance audits. A different operator/analyst will direct these audit operations to ensure the independence of the quantitative results.

In this program, EPA quality control concentrates and NBS Standard Reference Materials will be used to assess the analytical work. The Laboratory QC Coordinator or Project Manager will include appropriate QC samples in the analyses performed so that they are not recognizable to the analyst.

b. <u>System Audits</u>. System audits will be qualitative reviews of project activity to check that the overall QA program is functioning and that the appropriate QC measures are being implemented.

Assessment of Data Precision, Accuracy and Completeness

a. <u>Precision Estimates for Reference Method Tests, Process Parameter and Analytical Measurements</u>. Replicate samples will be collected and analyzed for each pollutant or process parameter measurement system. The standard deviation of these replicate measurements will be used to estimate their precision. The following equation will be used:

$$S = \left[\frac{N \overset{N}{\underset{i=1}{S}} S_i^2 \quad X - (\overset{N}{\underset{i=1}{S}} \quad X_i^2 \ )}{N(N-1)} \right]^{0.5}$$

where

S = standard deviation

X_i = individual measurement result

N = number of measurements

Relative standard deviation may also be reported. If so, it will be calculated as follows:

$$RSD = 100 \frac{S}{X}$$

where

RSD = relative standard deviation, expressed in percent

S = standard deviation

X = arithmetic mean of replicate measurements

Precision of duplicate samples will be reported as relative percent difference according to the equation below:

$$RPD = \frac{\left(\frac{X_1 - X_2}{X_1 + X_2}\right)}{2}$$

where

RPD = relative percent of difference

X_1 = concentration of aliquot 1

X_2 = concentration of aliquot 2

b. <u>Accuracy</u>. For each measurement system used in this program, measurements will be made on samples whose true values are known to QA/QC personnel but not to the person making the measurement. Examples of this activity include analyses of audit samples of unknown concentration, and collection and analysis of blanks.

Accuracy will be expressed as percent recovery or as relative error. The formulas given below will be used to calculate these values.

$$\text{Percent Recovery} = 100 \left(\frac{\text{Measured Value}}{\text{True Value}}\right)$$

$$\text{Relative Error} = 100 \left(\frac{\text{Measured Value - True Value}}{\text{True Value}}\right)$$

When a minimum of 30 samples from a matrix have been analyzed, the average percent recovery (p) and standard deviation of the percent recoveries (s) will be calculated for each surrogate. For each matrix, sample surrogate recoveries should fall within the following control limits:

Upper Control Limit (UCL) = p + 3s

Lower Control Limit (LCL) = p - 3s

If possible, samples with surrogate recoveries which do not meet these criteria will be re-analyzed by GC/MS. For performance audit samples, accuracy for each analyte will be defined as follows:

$$\text{Accuracy} = \frac{\text{amount found}}{\text{audit value}} \times 100$$

For metals, the accuracy for each analyte will be defined as follows:

$$\text{Accuracy} = \frac{\text{amount found}}{\text{certified value}} \times 100$$

c. Completeness. Completeness will be reported as the percentage of all measurements made whose results are judged to be valid. The procedures given in this section for validating data and testing for outliers will be used to determine what data are valid. The following formula will be used to estimate completeness:

$$C = 100 \frac{V}{T}$$

where

C = percent completeness

V = number of measurements judged valid

T = total number of measurements

Completeness will mean that 90 to 100% of all QC measurements for precision and accuracy fall within the limits indicated in Table 6.2-1.

Corrective Action. Perhaps the single most important part of any QA program is a well-defined, effective policy for correcting quality problems. A closed-loop corrective action system will be maintained under the direction of the QA Manager. While the entire QA program will operate to prevent problems, it will also serve to identify and correct those that may exist. Usually, these quality problems will require either on-the-spot, immediate corrective action or long-term corrective action.

Specific QC procedures and checklists will be designed to help field technicians and analysts detect the need for corrective action. Often the person's experience will be most valuable in alerting the operator to suspicious data or malfunctioning equipment.

If a corrective action can be taken at this point as part of normal operating procedures, the collection of poor-quality data can be avoided. Instrument and equipment malfunctions will be most amenable to this type of action, and QC procedures will include troubleshooting guides and corrective action suggestions. The actions taken will be noted in field or laboratory notebooks, but no other formal documentation will be required unless further corrective action is necessary. These on-the-spot corrective actions will be an everyday part of the QA/QC system.

If the problem is not solved in this way, more formalized long-term corrective action may be necessary. The need for this action may be identified by standard QC procedures, control charts, or performance or system audits. Any quality problem which cannot be solved by immediate corrective action falls into this long-term category.

A system will be used to ensure that the condition is reported to a person responsible for correcting it who is part of the closed-loop action and follow-up plan. The essential steps in the closed-loop corrective action system will be:

- Identify and define the problem
- Assign responsibility for investigating the problem
- Investigate and determine the cause of the problem
- Determine a corrective action to eliminate the problem
- Assign and accept responsibility for implementing the corrective action
- Establish effectiveness of the corrective action and implement it
- Verify that the corrective action has eliminated the problem

Documentation of the problem is important. A Corrective Action Request Form will be filled out by the person discovering the quality problem. This form will identify the problem, the possible causes, and the person responsible for action on the problem. The responsible person may be an analyst, field team leader, QC Coordinator, or the Project Manager. If no person is identified as responsible for action, the Project Manager will investigate the situation and determine who is responsible in each case.

The Corrective Action Request Form will include a description of the corrective action planned and the date it was taken, with space for follow-up. The QA Manager will verify that initial action has been taken and appears effective and, at an appropriate later date, will check again to see if the problem has been fully solved. The QA Manager will receive a copy of all Corrective Action Forms and will enter them in the Corrective Action Log. This permanent record will aid the QA Manager in follow-up and make any quality problems visible to management; the log may also prove valuable in listing a similar problem and its solution.

The QA Manager will maintain an active follow-up file, filing the QA forms in date order. If the follow-up on the indicated date shows a need for other action or continued follow-up, the action to be taken will be identified on the form and filed under the date for the next follow-up.

This type of system has proved quite effective in handling sequential types of corrective action since it brings the QA Form to the QA Manager's attention at a time appropriate to check on the next stage of corrective action. The same form can follow a problem until it has been solved.

6.2 DATA QUALITY OBJECTIVES

The collection of data that can be used to successfully accomplish the goals outlined in this trial burn plan requires that the sampling and analytical procedures be conducted with properly operated and calibrated equipment by trained, experienced personnel.

The usefulness of the data will be contingent upon the meeting of criteria for representativeness and comparability. Every effort will be made to ensure representativeness by adhering strictly to the sampling and analytical protocols outlined. The QA objective is that all measurements be representative of the streams sampled and of the incinerator operation being tested. Furthermore, the QA objective will be that all the data being generated be comparable with measurements made under similar process conditions by the laboratory.

Data Validation. Data validation is the process of filtering data and accepting or rejecting it on the basis of sound criteria. Supervisory and QC personnel will use validation methods and criteria appropriate to the type of data and the purpose of the measurement. Records of all data will be maintained, even those judged to be an "outlying" or spurious value. The

TABLE 6.2-1

DATA QUALITY OBJECTIVES

Parameter	Matrix	Test Condition	Precision (R %)	Accuracy Mean recovery (%)	Completeness (%)
Volatile POHCs and other volatile organic compounds	VOST traps	Instrument performance sample (QC check samples), one QC sample per 20 samples with a minimum of 4 QC samples	NA	50-150	100
	Auxiliary fuel Sludge Organic liquid waste	Instrument performance sample (organic) analyzed in quadruplicate at the start of analysis and once every 20 samples thereafter	see Table 6.2-2	see Table 6.2-2	100
	Containerized waste	Duplicate analyses for 2 runs	< 30	NA	90
Semivolatile POHCs	Stack emission (MM5)	Instrument performance sample analyzed in quadruplicate at the start of analysis	see Table 6.2-3	see Table 6.2-3	100
		Analysis of duplicate spiked blank filters and spiked XAD (method performance samples)	NA	50-150	100
		Replicate injection of sample at least once every 20 samples	< 30	NA	100
		Each sample spiked with SV method internal standards	NA	50-150	90% of data obtained from all runs
	Auxiliary fuel Sludge Containerized waste	Instrument performance sample analyzed in quadruplicate at the start of analysis and once every 20 samples thereafter	see Table 6.2-3	see Table 6.2-3	100
		Duplicate analysis	< 30	NA	90
	Kiln ash	Instrument performance sample analyzed in quadruplicate at the start of analysis and once every 20 samples thereafter	see Table 6.2-3	see Table 6.2-3	100
		Duplicate analysis for 1 run	< 30	NA	90
PCDDs/PCDFs	Stack Emission	Analysis of duplicate spiked blank filters and spiked XADs (method performance samples)	NA	50-150	100
		Instrument performance sample	NA	50-150	100

TABLE 6.2-1 (CONT.)

DATA QUALITY OBJECTIVES

Parameter	Matrix	Test Condition	Precision (R %)	Accuracy Mean recovery (%)	Completeness (%)
		Each sample spiked with ^{13}C-PCDD/PCDF method internal standards	NA	50-150	90% of data obtained from all runs
Metals	All matrices being analyzed, except stack gas	Duplicate digestion for each matrix	< 20	NA	90
	All matrices being analyzed, except stack gas	Matrix spike for each matrix	NA	80-120	90
	Stack gas	Duplicate analysis of 1 run	< 20	NA	90
	Stack gas	Analysis of instrument performance sample	NA	80-120	90
Chlorina	Aqueous Wastes	Duplicate analysis of each matrix for one run	< 20	NA	90
Chlorine	Organic liquid wastes	Analyze three spikes at three different CI levels	NA	80-120	100
Hydrogen chloride	Stack gas impinger solutions	Analyze an independent check sample	NA	80-120	1000
		Duplicate analysis for 1 run	< 30	NA	100

TABLE 6.2-2

QC ACCEPTANCE CRITERIA FOR VOLATILE ORGANIC COMPOUNDS

Parameter	Range for Q^b (ug/l)	Limit for s^c (ug/l)	Range for x^d (ug/l)	Range p, p_s[e] (%)
Benzene	12.8-27.2	6.9	15.2-26.0	37-151
Bromodichloromethane	13.1-26.9	6.4	10.1-28.0	35-155
Bromoform	14.2-25.8	5.4	11.4-31.1	45-169
Bromomethane	2.8-37.2	17.9	D[f]-41.2	D-242
Carbon tetrachloride	14.6-25.4	5.2	17.2-23.5	70-140
Chlorobenzene	13.2-26.8	6.3	16.4-27.4	37-160
Chloroethane	0-40.8	19.8	D-45.9	D-273
Chloroform	13.5-26.5	6.1	13.7-24.2	51-138
Chloromethane	0-40.8	19.8	D-45.9	D-273
Dibromochloromethane	13.5-26.5	6.1	13.8-26.6	53-149
1,2-Dichlorobenzene	12.6-27.4	7.1	11.8-34.7	18-190
1,3-Dichlorobenzene	14.6-25.4	5.5	17.0-28.8	59-156
1,4-Dichlorobenzene	12.6-27.4	7.1	11.8-34.7	18-190
1,1-Dichloroethane	14.5-25.5	5.1	14.2-28.4	59-155
1,2-Dichloroethane	13.6-26.4	6.0	14.3-27.4	49-155
1,1-Dichloroethene	10.1-29.9	9.1	3.7-42.3	D-234
trans-1,2-Dichloroethene	13.9-26.1	5.7	13.6-28.4	54-156
1,2-Dichloropropane	6.8-33.2	13.8	3.8-36.2	D-210
cis-1,3-Dichloropropene	4.8-35.2	15.8	1.0-39.0	D-227
trans-1,3-Dichloropropene	10.0-30.0	10.4	7.6-32.4	17-183
Ethyl benzene	11.8-28.2	7.5	17.4-26.7	37-162
Methylene chloride	12.1-27.9	7.4	D-41.0	D-221
1,1,2,2-Tetrachlorothane	12.1-27.9	7.4	13.5-27.2	46-157
Tetrachloroethene	14.7-25.3	5.0	17.0-26.6	64-148
Toluene	14.9-25.1	4.8	16.6-26.7	47-150
1,1,1-Trichloroethane	15.0-25.0	4.6	13.7-30.1	52-162
1,1,2-Trichloroethane	14.2-25.8	5.5	14.3-27.1	52-150
Trichloroethene	13.3-26.7	6.6	18.5-27.6	71-157
Trichlorofluoromethane	9.6-30.4	10.0	8.9-31.5	17-181

[a] These criteria are from EPA Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics. Calculations assume a QC sample concentration of 20 ug/l.

[b] Q = Recovery concentration measured in QC check sample in ug/l.

[c] s = Standard deviation of four recovery measurements (Q) in ug/l.

[d] x = Average recovery concentration for four measurements (Q) in ug/l.

[e] p, p_s = Percent recovery measured = (Q ÷ 20 ug/l) x 100.

[f] D = Detected; result must be greater than zero.

[g] Chloroethane criteria are not listed in Method 8240. Since chloroethane is chemically similar to chloromethane, chloromethane criteria will be used for chloroethane.

TABLE 6.2-3

QC ACCEPTANCE CRITERIA FOR SEMIVOLATILE ORGANIC COMPOUNDS

Parameter	Limit for s^b (ug/l)	Range for x^c (ug/l)	Range $p, p_s{}^d$ (%)
Hexachloroethane	24.5	55.2-100.0	40-113
1,2,4-Trichlorobenzene	28.1	57.3-129.2	44-142

[a] These criteria are from EPA Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics: Capillary Column Technique. Calculations assume a QC sample concentration of 100 ug/l.

[b] s = Standard deviation of four recovery concentration measurements in ug/l.

[c] x = Average recovery concentration for four measurements in ug/l.

[d] p, p_s = Percent recovery measured = Q ÷ 100 ug/l) x 100

persons validating the data will have sufficient knowledge of the technical work to identify questionable values.

a. Field Data. The following criteria will be used to evaluate sampling data:

- Use of approved test procedures
- Steady-state operation of the process being tested
- Use of properly operating and calibrated equipment
- Use of reagents that have passed QC checks
- Leak checks conducted before and after tests
- Proper chain of custody maintained

b. Laboratory Data. The following criteria will be used to validate laboratory data:

- Use of approved analytical procedure
- Use of properly operating and calibrated instrumentation
- Precision and accuracy achieved comparable to that achieved in similar analytical programs

6.3 CHAIN OF CUSTODY

Chain of custody for all samples will be maintained at all times. Once samples are taken, they will be the responsibility of the sampler or his/her designate until they are logged into the laboratory. The sampler will sign the chain of custody form as sampler and will sign upon relinquishing the samples either to the laboratory sample custodian or to a person who will take responsibility for transporting samples to the laboratory. All persons responsible for handling samples between the sampler and the laboratory sample custodian will sign the chain of custody forms as he/she receives or relinquishes responsibility for the samples.

Upon receipt at the laboratory, the samples will be entered into the laboratory logbook, given an identification number and given over to the custody of a single person responsible for their analysis. All samples will be inspected for damage, integrity of chain of custody, and leakage from liquid sample bottles. A written record will be kept of sample analyses. Analyzed samples will be retained until a final report is issued and accepted. Any time a sample is removed from the laboratory repository, the identification of personnel handling it will be logged into the chain-of-custody book. Field and laboratory custody procedures are detailed below.

a. <u>Field Custody Procedures</u>. In addition to identification labels or tags, chain-of-custody seals will be used on samples collected by field personnel. These self-sticking seals will be placed across the sample container cover/lid in such a way that the container cannot be opened without breaking the seal. The condition of the seal will be noted in the Sample Bank Master Log to document whether any tampering has occurred after the sample was collected. The chain of custody of a sample will be initiated and maintained as follows:

- A sample will be collected, labeled, and sealed, and the liquid level marked on appropriate samples
- The sample will be recorded on the Sample Packing Sheet
- All samples will be cross-referenced on Field/ Laboratory Coordination Form
- All samples will be accounted for, packed, and returned to the laboratory

b. <u>Laboratory Custody Procedures</u>. Upon return to the laboratory, the samples and the Sample Packing Sheet will be turned over to the Sample Bank Manager who:

- Logs the sample into the Sample Bank Master Log

- Notes the condition and the container type

- Assigns and affixes a control number to the sample container

- Initiates a page for each sample in the Custody Book and makes sure that handling of the sample is documented

- After necessary preservation and/or subdivision, stores the samples in the refrigerated or non-refrigerated section of the Sample Bank as appropriate

All withdrawals from and returns to the Sample Bank will be entered in the Sample Bank Transactions Log Book. When sample preparation and analysis procedures necessitate the transfer of samples between two analysts within the laboratory, a Sample Custody Transfer Form will be required. When samples will be transferred to an outside laboratory, they must be accompanied by a Receipt of Sample for Analysis Form.

6.4 SAMPLING EQUIPMENT CALIBRATION

The sampling equipment will be calibrated according to EPA procedures specified in APTD 0576 and 40 CFR 60, Appendix A, and manufacturers' specifications.

Dry Gas Meter and Orifice Meter. The dry gas meters for all sampling trains will be calibrated against a standard wet test meter which has been calibrated against a spirometer. The meters will be adjusted so that the measured gas volumes are within 1% of proof; i.e., Y factor is between 0.99 and 1.01. The orifice meters in the particulate train meter control box will be calibrated against the wet test meter and checked against the dry gas meter to which it is attached.

Thermocouples. The type-K thermocouples in the meter control box, heated sample box, impinger umbilical connector, and the one attached to the probe will be calibrated against ASTM mercury-in-glass thermometers at two points. The first point will be in an ice bath and the second in water at the boiling point.

Pitot Tube. The S-type pitot tubes will be designed to meet geometric configurations as defined in EPA Method 2.

CO Monitor. Prior to sampling, the NDIR analyzer will be calibrated with known CO standards in nitrogen and zeroed with prepurified N_2. The span concentration will not exceed 150 ppm. The remaining CO standards will correspond to approximately 30% and 60% of the span. Details will follow the EPA guideline which is being finalized (see Reference 4).

THC Monitor. The continuous THC monitor will be calibrated in accordance with the procedures in the most current EPA guidance document on control of PIC emissions from hazardous waste incinerators.

6.5 LABORATORY EQUIPMENT CALIBRATION

Laboratory instruments will be calibrated in a manner consistent with EPA calibration protocols. Calibrations will be documented in the instrument logbook and/or the parameter notebook.

For GC/MS methods, a minimum of three calibration standards at different concentrations of each analyte of interest will be prepared by adding a precise amount of one or more stock standards of known purity to a volumetric flask and diluting to a volume with an appropriate solvent. The concentrations of the calibration standards will correspond to the expected concentration range of the analyte in the samples. A performance standard, prepared from an independently prepared stock standard solution, will be analyzed to verify the accuracy of the calibration standards.

The number of calibration standards used to prepare the calibration curve will depend on the sample type and method. VOST trap analysis for volatile organic compounds will require calibration standards at three levels with each standard being analyzed on both a Tenax and Tenax/charcoal trap. Analysis of volatile organic compounds in waste samples will require five levels, as will analysis of all semivolatile organic samples. A minimum of three calibration standards will be used for PCDD and PCDF analyses.

A calibration curve will be prepared from the results of tabulated peak heights or area responses against the concentration. Alternately, if the ratio of response to amount injected (response factor) is a constant over the working range, the average response factor will be used in lieu of the calibration curve.

A fresh calibration curve or response factor will be prepared or determined prior to each analytical run. During extended instrument runs, the working calibration curve or response factor will be verified by running a check calibration standard at least every 12 hours and at the end of the day's run.

For metal analyses, calibration standards will be prepared at appropriate concentrations from commercial standard analytical reference materials. Instruments will be calibrated using the manufacturer's recommended techniques and procedures specified in SW-846.

6.6 SAMPLE DISPOSITION

The samples obtained during the tests will be analyzed by the on-site laboratory or on a contract basis. The laboratory will be responsible for disposing the samples within applicable RCRA and other guidelines.

7.0 PRE-TRIAL-BURN OPERATION

In order to fully test all components of the system, up to 720 hours of operating time for the processing of hazardous waste allowed by 40 CFR 270.62(a) will be necessary. During this time, the six major forms of hazardous waste feed will be tested at a variety of feed rates and heating values. These wastes are as follows:

- High-Btu liquid
- Low-Btu liquid
- Direct-burn liquid
- Sludge
- Containerized waste
- Bulk solids

In order to shake down the acid gas scrubbing system and the particulate emission control system, it will be necessary to incinerate wastes containing organically bound chlorine, metals, and wastes that produce particulates. The exact wastes that will be incinerated during this period have not yet been identified, nor has the exact amount of time that each waste feed mechanism will be in operation. Therefore, up to 720 hours of operating time will be used to shakedown the system.

During this shakedown phase, the operating parameters needed to indicate compliance with destruction and removal efficiency (DRE) requirements will be

- Operating temperatures
- Excess air rate, as measured by continuous O_2 monitoring
- CO content of the combustion gases
- Combustion gas velocity, as measured by stack flowmeter

During the shakedown period the incinerator will be operated as close as possible to the trial burn conditions while remaining in compliance with RCRA requirements. The secondary combustion chamber (SCC) will be operated at a minimum temperature of 1,800° F, and the rotary kiln will be operated at a minimum of 1,440°F. To ensure adequate excess air at these temperatures, the O_2 content will be maintained above 8% on a dry volume basis as measured by the O_2 monitor at the stack. The SCC temperature and O_2 content proposed here is more stringent than that proposed for the trial burn, as required by 40 CFR 264.345. To ensure adequate residence time, the combustion gas velocity will be limited to that corresponding to 68,555 acfm at 365°F at the fabric filter outlet. This will result in a minimum gas residence time of greater than two seconds for the SCC alone, in addition to the several seconds of gas residence time in the kiln and transition chamber. Furthermore, the CO content of combustion gases will be maintained below 100 ppm, based on a one-hour rolling average.

In developing the proposed operational requirements, several factors have been considered. The rotary kiln, at the very least, can supply hot, partially combusted gases to the SCC. Operating the rotary kiln at 1,440°F should destroy most Appendix VIII organic compounds, and this temperature is also sufficient to completely combust the solids. Additionally, this temperature is within typical operating ranges of most rotary kilns. The 1,800°F temperature at which the SCC will be operating will destroy any remaining Appendix VIII compounds. This temperature is also in the range of required operating conditions for hazardous waste incinerators. On this basis, the indicated operating temperatures will be more than adequate for the interim shakedown period.

Continuous measurement of combustion gas velocity will provide a good indication of residence time in the combustion zone. The proposed excess air rate will ensure adequate mixing of combustion gases with O_2. Thus, the proposed combination of residence time, excess air, and combustion temperature will be more than sufficient to ensure that maximum waste destruction efficiency will be achieved during the interim shakedown period.

Achievement of the performance standard for HCl will be indicated by the total lime usage in the spray dryer absorber. Therefore, during the interim shakedown period, it is proposed that a minimum stoichiometric lime/HCl ratio of 2:1 in the spray dryer absorber will be sufficient to comply with the HCl standard of 99% removal.

Visual opacity monitoring once per shift is proposed to indicate compliance with state and federal particulate emission standard during the interim shakedown period. An opacity of 20% or less should indicate compliance with the particulate matter standard for hazardous waste incinerators of 0.08 gr/dscf corrected to 7% O_2 (40 CFR 264.343). Compliance with the draft standards for metals will be demonstrated by documenting the feed rates of the listed metals to the kiln, SCC, and SDA makeup water, as detailed in the waste characterization and waste analysis plan included in Section C of the Application.

Two restrictions on waste constituents are proposed for the shakedown period. The first proposed restriction is that no waste regulated under 40 CFR 761 (polychlorinated biphenyls [PCBs]) will be incinerated. The second proposed restriction is that no waste listed as K001, F020 through F023, and F025 through F028 in the EPA April 1, 1983 listing of wastes containing dioxin or dioxin precursors be incinerated during the shakedown period.

The high temperatures and residence times provided by the system will destroy any Appendix VIII organic compound. The acid gas and particulate emission control systems will be closely monitored to ensure compliance with 40 CFR 264.343. Because the performance standards for DRE, HCl, and particulate matter and proposed standards for metals will be met by the indicated monitoring provisions, operation during the shakedown period will not pose a threat to human health or the environment. Thus, no restriction on waste constituents other than those proposed above are necessary during the pre-trial-burn (shakedown) period.

The following restrictions are proposed on waste feed rates during this period:

- No combination of waste and/or fuel introduced into the SCC will exceed the design heat release rate of 40 MM Btu/hr
- The maximum feed rate of waste to the kiln and SCC will not exceed 16,550 lb/hr.
- No combination of waste and/or fuel introduced into the rotary kiln will exceed the design heat release rate of 75 MM Btu/hr
- No combination of total waste and/or fuel introduced into the entire incinerator will exceed the overall system design heat release of 75 MM Btu/hr
- The feed rate of containized waste to the kiln will not exceed 6,000 lb/hr (equivalent to 24 55-gallon drums/hr).
- The feed rate of bulk solid waste will not exceed 10,400 lb/hr.

In order to shake down the system, it will be necessary to test the burners and the waste feed mechanisms at a wide variety of rates and, in particular, the anticipated maximum waste feed rates for each feed mechanism shown in Table 7.0-1. To achieve these maximum feed rates, wastes with low heating values must be used so that the design heat release rate of the system of 75 MM Btu/hr will not be exceeded. However, because the system temperatures will be 1,440°F (or higher) for the rotary kiln and 1800°F (or higher) for the SCC, and since the residence time will be at least two seconds in the SCC with >3% stack gas O_2 content, organic material will be fully destroyed even when the waste is being fired at the maximum total feed rate of 16,550 lb/hr. In order to fully shake down the system before the trial burn, therefore, no restrictions other than the maximum heat release, maximum total feed rate, and maximum solids feed rates are proposed on the waste feed rate.

During the shakedown period, the CO and THC levels in the combustion gas will be monitored. The CO level will not exceed 100 ppm based on a 60-minute rolling average during this period. If this level is exceeded, waste feed will be automatically cut off.

As required by 40 CFR 264.345, hazardous waste will not be fed into the incinerator during startup. All system temperatures, excess air, CO, and other parameters will be stabilized using auxiliary fuel prior to introducing any hazardous waste. Hazardous waste will also not be fed into the incinerator during shutdown.

The control of fugitive emissions from the combustion zone during the shakedown period will be accomplished by maintaining a negative pressure in the combustion system.

All the components of the automatic waste feed cutoff system will be fully operational before initiating operation with hazardous waste. As required by 40 CFR 264.347(c), the waste feed cutoff system will be tested weekly, and the results will be recorded in the operations log. Each of the critical waste feed cutoffs discussed in this section will be tested on a weekly basis.

All other monitoring and inspection provisions of 40 CFR 264.347 will be met during this interim operations period. The incinerator system and associated equipment will be visually inspected each day for leaks, spills, and fugitive emissions, as discussed in the Inspection Plan, Section F-2.

Table 7.0-2 compares the regulatory requirements of 40 CFR 270.62(a) and (a)(1) with the proposed action/controls to provide compliance with each section. Accordingly, the operation of the system in the period between startup and the trial burn will not pose a threat to human health or the environment.

Since the incinerator has yet to be constructed, a calendar date for the start of the trial burn cannot be defined at this time; however, the trial burn will be planned to begin at the completion of the operational readiness pre-trial period allowed under the provisions of 40 CFR 270.62(a). This pre-trial period is limited to up to 720 hours of operation with hazardous waste upon completion of physical construction of the incinerator. This period allows for calibration or shakedown of all process equipment and instruments prior to the start of the trial burn. Upon satisfactory completion of the operational readiness pre-trial period, the trial burn will start.

TABLE 7.0-1

MAXIMUM FEED RATES OF EACH WASTE TYPE AND AUXILIARY FUEL TO THE INCINERATOR AT MINIMUM AND MAXIMUM HEATING VALUE OF WASTE FEED TYPES

WASTE TYPE	FEED MECHANISM	MAXIMUM FEED RATE	WASTE STREAM HEATING VALUE	HEAT RELEASE
Liquid	Kiln Burner	3,750 lb/hr 1,500 lb/hr	at 8,000 Btu/lb at 20,000 Btu/lb	30 MM Btu/hr 30 MM Btu/hr
Sludge	Kiln Sludge Nozzle	6,000 lb/hr 2,400 lb/hr	at 0 Btu/lb at 20,000 Btu/lb	zero Btu/hr 48 MM Btu/hr
Liquid	Kiln Waste Nozzles (each of 3)	3,000 lb/hr 1,200 lb/hr	at 0 Btu/lb at 20,000 Btu/lb	zero Btu/hr 24 MM Btu/hr
Containers	Kiln Containerized Waste Feed	6,000 lb/hr 3,000 lb/hr	at 0 Btu/lb at 12,000 Btu/lb	zero Btu/hr 36 MM Btu/hr
Bulk Solid	Kiln Bulk Soild Waste Feed	10,400 lb/hr 4,200 lb/hr	at 0 Btu/lb at 12,000 Btu/lb	zero Btu/hr 50 MM Btu/hr
Liquid	SCC Burners (each of 3)	1,625 lb/hr 650 lb/hr	at 8,000 Btu/hr at 2,000 Btu/hr	13 MM Btu/hr 1.3 MM Btu/hr
Liquid	SCC Nozzle	2,000 lb/hr 1,000 lb/hr	at 0 Btu/hr at 20,000 Btu/lb	zero Btu/hr 20 MMBtu/hr

TABLE 7.0-2

PRE-TRIAL-BURN PERIOD OPERATING CONDITIONS

	ITEM	REGULATORY REFERENCE	COMPLIANCE DEMONSTRATION/ACTION
1.	Allowable period for incinerating hazardous waste	270.62(a)	Anticipated 720 hours in compliance
2.	Performance standards	270.62(a)(1) 264.343*	
	a. DRE		Minimum rotary kiln temperature of 1,440°F Minimum SCC temperature of 1,800°F Minimum O_2 of 8% Maximum stack gas flow of 68,555 acfm at 365°F, resulting in >2-second residence time in SCC.
	b. HCl		Minimum lime/HCl stoichiometric ratio of 2:1
	c. Particulate matter		Opacity not to exceed 20%
3.	Restriction on waste constituents	270.62(a)(1)	PCBs and K001, F020 through F023, and F025 through F028 wastes will not be incinerated.
4.	Restrictions on waste feed rate	270.62(a) 264.345(b)(2)*	Kiln heat release not to exceed 75 MM Btu/hr. SCC heat release not to exceed 40 MM Btu/hr. Total system heat release not to exceed 75 MM Btu/hr. Total waste feed rate not to exceed 16,550 lb/hr. Total bulk solids feed rate to the kiln not to exceed 10,400 lb/hr. Total feed rate of containerized waste to the kiln not to exceed 6,000 lb/hr (equivalent to 24 55-gallon drums/hr).

* Incorporated by reference in 270.62(a)(1)

TABLE 7.0-2

PRE-TRIAL-BURN PERIOD OPERATING CONDITIONS (CONT.)

	ITEM	REGULATORY REFERENCE	COMPLIANCE DEMONSTRATION/ACTION
5.	CO level in combustion gas	270.62(a)(1)	Not to exceed 100 ppm on one-hour rolling average
6.	Combustion temperature	270.62(a)(1)	Rotary kiln: 1,440°F minimum SCC: 1,800°F minimum.
7.	Indication of combustion gas velocity	270.62(a)(1) 264.345(b)(4)	Combustion gas flow less than 68,555 acfm at 365°F (with one-minute time delay).
8.	Startup and shut-down periods	270.62(a)(1) 264.345(c)*	No hazardous waste will be fed to the incinerator during periods of startup or shutdown
9.	Fugitive emissions	270.62(a)(1) 264.345(d)*	System will be under negative pressure
10.	Automatic waste feed cutoffs	270.62(a)(1) 264.345(e)*	Automatic waste feed cutoffs will be fully operational prior to startup. Each cutoff system will be tested each week.
11.	Design limits	270.62(a)(1) 264.345(b)(6)*	Design heat release rate of 75 MM Btu/hr will not be exceeded.

* Incorporated by reference in 270.62(a)(1)

8.0 POST-TRIAL-BURN OPERATION

This section fulfills the requirements of 270.62(c)(1) and discusses planned incinerator operation during the period between completion of the trial burn and before receipt of a final permit. FFPI will be permitted to operate the incinerator under the construction permit until final agency action is taken on the operation permit provided that the trial burn test results and site inspection show the facility to be in compliance with 40 CFR Part 264 standards. FFPI will be permitted to operate under the construction permit if the trial burn results are not approved within 60 days of submittal.

During the trial burn, the incinerator system will have been run at a wide variety of conditions. It is proposed that a CO emission of less than 100 ppm on an one-hour rolling average, for a given test conducted during the trial burn, will be used to assume that the DRE was achieved during the test; therefore, the tested conditions (temperatures, waste feed rates, etc.) will be used as operational conditions with regard to the DRE until final analytical test results are available. CO emissions for each test will be received by the permitted authority within three days of completion of the trial burn. During this three-day period, operation will be conducted in accordance with pre-trial-burn parameters.

Compliance with the performance standards for HCl and particulate matter will be demonstrated documenting lime usage in the SDA, and by visual opacity monitoring, as proposed in the pre-trial-burn operating parameters in Section 7. Compliance with the draft standards for metals will be demonstrated by documenting feed rates of metals to the kiln, SCC, and SDA makeup water. These are the best indicators that will be available until the final test results are available.

During the post-trial-burn operational period, it is proposed to continue to control the incinerator operating conditions to achieve the 100 ppm one-hour rolling average CO level proposed for the pre-trial-burn period. This limit is low enough to ensure proper combustion, but high enough to allow for CO spikes that will occur during changes in temperature, feed rate, air flow, and waste composition, and is within proposed standards for CO emissions from hazardous waste incinerators. This continuously monitored variable will be used to correlate incinerator performance with DRE in the post-trial-burn period.

The same restrictions on waste constituents proposed for the pre-trial-burn period are proposed for the post-trial-burn period; i.e., no waste regulated under 40 CFR 761 or K001, F020 through F023, or F025 through F028, wastes will be incinerated. The compounds selected as POHCs are the most difficult compounds to incinerate that could reasonably be selected. Achieving a CO emission of less than 100 ppm for these compounds indicates that the CO emission would also be less than 100 ppm for compounds that are more easily incinerated than the POHCs. The DRE should also be achieved for more easily incinerated compounds; therefore, no other restrictions on organic waste constituents will be necessary.

Feed rates of metals to the incinerator will be limited to those rates and feed mechanisms demonstrated during the trial burn. The total feed rate of each metal listed in the draft standards for metal emissions from hazardous waste incinerators will be limited to that demonstrated in trial burn tests two and three, unless higher metals removal efficiencies are demonstrated in during the pre-trial-burn period and trial burn test four. The feed rates of each metal to liquid waste streams will be limited to no more than 75 percent of the total feed rate of that metal to the incinerator. Recommended permit limitations for total metals feed rates to the incinerator are based on trial burn tests two and three test conditions in Tables 1.3.2-1 though 1.3.2-4 of the trial burn plan. Alternative permit limits are recommended based on trial burn test four conditions in Tables 1.3.3-1 and 1.3.3-2 of the trial burn plan.

The same CO emission standard is proposed for restriction on waste feed rates; that is, the waste feed rate through a given mechanism will not exceed rates demonstrated during trial burn tests that achieve a CO emission of less than 100 ppm. Because the CO emission will be demonstrated at the maximum feed rates used during the trial burn, and because it will be less difficult to incinerate wastes at lower feed rates, no other restrictions on waste feed rates are necessary or proposed.

The combustion gas velocity will not exceed those tested conditions that demonstrated a CO emission of less than 100 ppm as a one-hour rolling average. Combustion temperatures in both the kiln and SCC will be maintained above those tested conditions that demonstrated the 100-ppm average CO emission level. In compliance with 264.345(c), hazardous waste will not be fed into the incinerator until the demonstrated temperatures, excess air rates, and other parameters have been reached. The control of fugitive emission during the post-trial burn period will be as previously discussed for the pre-trial burn operations.

The automatic waste feed cutoff system will be fully operational during post-trial burn operation. The demonstrated kiln and SCC temperatures and excess air rates will be incorporated into the automatic waste cutoff for this period of operation. The automatic waste feed cutoff system will be tested on a weekly basis as previously discussed.

Table 8.0-1 summarizes the proposed operating parameters for this phase of operation in compliance with regulatory requirements of 270.62(c)(1). Tables 8.0-2, 8.0-3, and 8.0-4 present recommended permit limitations for the incinerator.

TABLE 8.0-1

POST-TRIAL-BURN OPERATING CONDITIONS

ITEM	REGULATORY REFERENCE	COMPLIANCE DEMONSTRATION/ACTION
1. Performance standards	269,62(c)(1) 264.343*	
a. DRE		Operations restricted to operating parameters which demonstrate a CO emission of less than 100 ppm on a one-hour rolling average.
b. HCl		Lime/HCl stoichiometric ratio of 2:1 or greater.
c. Particulate matter		Opacity less than 20%.
2. Restriction on waste	270.62(c)(1)	PCBs, K001, F020 through F023, and F025 through F028 wastes will not be incinerated.
3. Restriction on waste	270.62(c)(1)	Not to exceed that which was demonstrated under Item 1 above.
4. CO level on combustion gas	270.62(c)(1) 264.345(b)(2)*	Not to exceed that which demonstrated under Item 1 above.
5. Combustion temperature	270.62(c)(1) 264.345(b)(3)*	Not below that which was demonstrated under Item 1 above.
6. Indication of combustion gas velocity	270.62(c)(1) 264.345(b)(4)*	Not to exceed that which was demonstrated under Item 1 above.

TABLE 8.0-1

POST-TRIAL-BURN OPERATING CONDITIONS (CONT.)

ITEM	REGULATORY REFERENCE	COMPLIANCE DEMONSTRATION/ACTION
7. Startup and shut-down periods	270.62(c)(1) 264.345(c)*	No hazardous waste will be fed to the incin-erator during periods of startup or shutdown.
8. Fugitive emissions	270.62(c)(1) 264.345(d)*	System will be under negative pressure.
9. Automatic waste Feed Cutoff System	270.62(c)(1) 264.234(e)* 264.357(c)*	Automatic waste feed cutoffs will be fully operational. Each cutoff system will be tested each week. Cutoff points to be based on parameters in Item 1 above.
10. Design limits	270.62(c)(1) 264.345(b)(6)*	Design heat release rate total waste feed rate, and total bulk solid and containerized waste feed rates will not be exceeded.

* Incorporated by reference in 270.62(a)(1).

TABLE 8.0-2

RECOMMENDED PERMIT CONDITIONS

Type of Monitoring	Parameter	Permit Condition	Basis
D	Bulk solid waste feed rate	< 10,400 lbs/hr	Will be demonstrated by Trial Burn.
D	Containerized Waste feed rate	< equivalent of 12 55-gal drums/hr < 6,000 lb/hr	Will be demonstrated by Trial Burn.
E	Total thermal loading to kiln	< 75 MM Btu/hr	Will be demonstrated by Trial Burn.
E	Total thermal loading to SCC	< 40 MM Btu/hr	Will be demonstrated by Trial Burn.
E	Total thermal loading to system	< 75 MM Btu/hr	Will be demonstrated by Trial Burn.
E	Total metals feed rate	See Table 8-0-3 and 8.0-4	Will be demonstrated by Trial Burn.
A	Kiln combustion gas outlet temperature	> 1,440°F	Will be demonstrated by Trial Burn.
A	SCC combustion gas outlet temperature	> 1,800°F	Will be demonstrated by Trial Burn.
A	Stack gas carbon monoxide emissions	< 100 ppm (1-hour rolling average)	Current guidance from EPA.
A	Stack gas oxygen concentration	> 3% (1-hour rolling average)	A redundant control parameter to assure maintenance of high combustion efficiency
A	Stack gas flow rate	< 68,555 acfm @ 365°F (15-min. rolling average)	Will be demonstrated by Trial Burn.
A	Kiln internal pressures	< 0 (1-min. rolling average)	Necessary to prevent fugitive emissions from kiln and rest of system

TABLE 8.0-2 (continued)

RECOMMENDED PERMIT CONDITIONS

Type of Monitoring	Parameter	Permit Condition	Basis
A	Total organic chlorine loading	< 1,202 lbs/hr	Design HCl removal capacity of spray dryer absorber; demonstrated by Trial Burn.
B	Pressure differential across fabric filter	> 2 and < 16 inches WC (15 min. rolling average)	Based on manufactures performance data
A	Combustion gas temperature at inlet to fabric filter	< 500°F	Protection of downstream equipment
NA	Operation of interlock control and emergency shutdown systems	Operable as described in Subsection 1.4.8 and Section D	Maintenance of critical operating conditions and response to emergency conditions
C	Waste characteristics for waste burners	> 6,500 Btu/lb < 150 SSU	To assure maintenance of stable flame in burners

Definition of Types of Monitoring:

A Parameter is continuously monitored by interlock control system which take automatic response action if parameter goes out of limit (see Subsection 4.2).

B Parameter is continuously monitored and recorded and is reported to an alarm which is activated if an out-of-limit measurement is detected to enable the operator to take corrective action.

C Parameter is not continuously monitored but is periodically measured and recorded and is used by the operator to manage operation of the incinerator.

D Parameter is continuously monitored and recorded and is used by the operator to control it within the permit limit.

E Parameter is predetermined, from waste characteristic measurements, in the development of the prevailing waste burn campaign plan which establishes waste feed rates which will keep the parameter with limits. The waste feed rates are continuously monitored and recorded and used by the operator to maintain compliance with the waste burn campaign plan.

NA Monitoring not applicable.

TABLE 8.0-3

RECOMMENDED PERMIT LIMITS FOR METALS FEED RATES TO THE INCINERATOR BASED ON TRIAL BURN TEST TWO AND THREE CONDITIONS

		Metal Feed Rate (lb/hr)	
		Liquid Waste	Total Feed
CARCINOGENIC METALS			
ARSENIC	(As)	1.245	1.66
BERYLLIUM	(Be)	0.248	0.331
CADMIUM	(Cd)	2.483	3.31
CHROMIUM	(Cr^{+6})	3.724	4.965
NONCARCINOGENIC METALS			
ANTIMONY	(Sb)	37.2	49.6
BARIUM	(Ba)	37.2	49.6
LEAD	(Pb)	17.42	23.2
MERCURY	(Hg)	6.21	8.28
SILVER	(Ag)	37.2	49.6
THALLIUM	(Tl)	12.45	16.6

TABLE 8.0-4

RECOMMENDED PERMIT LIMITS FOR METALS FEED RATES TO THE INCINERATOR BASED ON TRIAL BURN TEST FOUR CONDITIONS

	Metal Feed Rate (lb/hr)	
	Liquid Waste	Total Feed
CARCINOGENIC METALS		
ARSENIC (As)	2.48	3.31
BERYLLIUM (Be)	0.248	0.331
CADMIUM (Cd)	3.72	4.96
CHROMIUM (Cr^{+6})	4.965	6.62
NONCARCINOGENIC METALS		
ANTIMONY (Sb)	37.2	49.6
BARIUM (Ba)	37.2	49.6
LEAD (Pb)	43.42	57.9
MERCURY (Hg)	6.21	8.28
SILVER (Ag)	37.2	49.6
THALLIUM (Tl)	12.45	16.6

9.0 INCINERATOR OPERATING PROCEDURES

The following procedure will ensure that the incinerator is at steady-state permitted operational conditions before waste is introduced to the system.

9.1 STARTUP PROCEDURES

The incinerator will be brought to and stabilized at normal operating conditions using auxiliary fuel to assure it is ready for initiation of waste feed.

The major tasks involved in a normal startup are as follows:

1. Prepare for startup.
2. Verify that instrumentation and control systems are operational. Confirm that continuous emissions monitors are functioning properly.
3. Start ID fan and combustion air fans. Establish draft control in "AUTOMATIC".
4. Start process water flow and lime slurry recirculation flow to the spray dryer absorber (SDA).
5. Start one SCC burner on auxiliary fuel. Set burner on low fire.
6. Start kiln ash conveyor and kiln rotation. Start process water flow to ash conveyor sump.
7. Start kiln burner on auxiliary fuel. Set burner at low fire.
8. Start bringing combustion chamber operating temperatures up to normal following heat-up schedule in Operations Manual. Raise temperatures in "AUTOMATIC" control mode.
9. Start fabric filter pulse-cleaning cycles and dry solids conveyors. Initiate lime slurry flow to SDA atomizer.
10. Verify normal operation of SDA.

11. When combustion temperatures are in normal range, verify that all waste feed cutoffs (permissives) are clear.

12. Start one or more SCC burners on high-Btu liquid waste while maintaining normal temperature. Place on "AUTOMATIC" control.

13. Convert kiln burner to high-Btu liquid waste and maintain normal temperature. Place on "AUTOMATIC" control.

14. Start one or more low-Btu, sludge, or direct-burn waste flows to kiln nozzles. Verify that temperature stabilizes in normal range as defined in Operations Manual.

15. Start bulk or containerized solids feed. Verify that temperature stabilizes in normal range. Readjust other waste feeds if necessary.

9.2 NORMAL SHUTDOWN PROCEDURES

Normal shutdown procedures should be followed for any scheduled activity which requires that the incinerator be off line and accessible to maintenance personnel or for entry into equipment items. Normal shutdown includes the following major activities:

1. Shut off all liquid sludge, and solid waste feed streams.

2. Reduce system temperatures following normal refractory cool-down schedule.

3. Shut off auxiliary fuels.

Detailed activities are as follows:

1. Shut down solids and sludge feeds.

2. Wait 30 minutes for combustion of solids in kiln.

3. Increase kiln rotation to 100%.

4. Shut down liquid waste feeds.

5. Switch kiln and SCC burners to auxiliary fuel.

6. Shut down all waste recirculation pumps.

7. Ten minutes after stopping liquid waste feeds, begin reducing kiln and SCC temperatures following normal refractory cool-down schedule.

8. When SCC exit gas temperature is below 1000°F:

   - Shut off all burners;
   - Stop the ID fan; and
   - Verify that air blowers and rotary atomizer have stopped and that fabric filter bypass has opened.

9. When kiln exit gas temperature is below 400°F, stop the kiln rotation and shut off ash conveyor.

Controlling Emissions During Shutdown. In a normal shutdown, emissions will not be above normal levels. The temperature of the SCC will be maintained within the compliant range until the solids charge in the kiln is burned out and discharged. The APC system will remain on line for the duration of the shutdown period.

9.3 NORMAL OPERATING PROCEDURES

When normal operating conditions using auxiliary fuels are achieved and stabilized under either cold or hot startup procedures, the incinerator will be ready for the initiation of waste feeds. The operator will develop a waste campaign burn plan for a specific set of wastes which are being held in inventory and are ready for incineration. This plan will cover a waste burn campaign for one or more operating shifts, depending on the amounts and types of wastes in inventory which are prepared for incineration. To develop this plan, the operator will use a mass and heat balance calculation procedure and the analyzed characteristics of the wastes (particularly their heating values and chlorine contents) to determine that combination of waste feed rates that will produce the operating conditions specified in the permit and achieve the required performance standards. The operator will then use the following procedures to initiate the feeding of wastes:

1. If organic liquids are to be fed to the kiln, the feeding of these wastes through the direct-burn nozzle will be initiated, and the feed rate of auxiliary fuel to the kiln burner will be reduced.

2. If pumpable sludge is to be fed to the kiln, the feeding of this waste through the sludge nozzle will be initiated, the feed rate of auxiliary fuel to the kiln burner will be further reduced and, if necessary, the feed rate of the organic liquids to the direct-burn nozzle will be adjusted.

3. If low-Btu wastes are to be fed to the kiln, the feeding of these wastes through the low-Btu nozzle will be initiated, and the feed rates of auxiliary fuel to the kiln burner and/or the feed rates of other wastes will be adjusted as necessary.

4. If bulk solid wastes are to be fed to the kiln, the feeding of these wastes through the kiln solids feed chute will be initiated, the feed rates of the auxiliary fuel and other wastes to the kiln will be adjusted as necessary, and the feeding of turbulence air to kiln will be initiated as and when necessary.

5. If containers of wastes are to be fed to the kiln, the feeding of these wastes will be initiated, and the feed rates of auxiliary fuel and other wastes to the kiln will be adjusted as necessary.

The foregoing procedures will result in the combined feeding of wastes at the feed rates specified in the campaign waste burn plan. As these wastes are being incinerated, the operator will continuously monitor the operating conditions. If any of the operating conditions begin to drift to its maximum and/or minimum limit, the operator will adjust the waste, fuel, combustion air, lime slurry, and/or cooling water feed rates to bring the operating condition back to mid-range.

Before completion of the waste burn campaign, the operator will develop the burn plan for the next waste burn campaign, again using a mass and heat balance calculation procedure and the analyzed characteristics of the wastes to be burned in the next campaign. As the current waste burn campaign is being terminated, the operator will gradually switch waste feeds over to those specified in the next campaign, following procedures similar to those delineated above. Following the initiation of this campaign, the operator will continue to monitor the operating conditions and will make feed rate adjustments, as necessary, to keep these conditions at or near mid-range.

References for Sampling and Analyses Methods

1. "Sampling and Analysis Methods for Hazardous Waste Combustion," A. D. Little, Inc., EPA-600/8-84-002, NTIS PB84-155845, February 1984.

2. "Test Methods for Evaluating Solid Waste," EPA Office of Solid Waste, SW-846, Third Edition, November 1986.

3. "Protocol for the Collection and Analysis of Volatile POHCs (Principal Organic Hazardous Constituents) using VOST (Volatile Organic Sampling Train)," Envirodyne Engineers, Inc., EPA-600/8-84-007, NTIS PB84-170042, March 1984.

4. "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III, Stationary Source Specific Methods", U.S. EPA 600/4-77-027b.

FLORIDA FIRST PROCESSING, INC.

ATTACHMENT D-6-2

REFERENCE METHODS

Date: 5/31/89
Revision: 0

EPA METHOD 12

Determination of Inorganic Lead Emissions from Stationary Sources

Date: 5/31/89
Revision: 0

METHOD 12—DETERMINATION OF INORGANIC LEAD EMISSIONS FROM STATIONARY SOURCES

1. *Principle and Applicability*

1.1 Applicability. This method applies to the determination of inorganic lead (Pb) emissions from specified stationary sources only.

1.2 Principle. Particulate and gaseous Pb emissions are withdrawn isokinetically from the source and collected on a filter and in dilute nitric acid. The collected samples are digested in acid solution and analyzed by atomic absorption spectrometry using an air acetylene flame.

2. *Range, Sensitivity, Precision, and Interferences.*

2.1 Range. For a minimum analytical accuracy of ±10 percent, the lower limit of the range is 100 μg. The upper limit can be considerably extended by dilution.

2.2 Analytical Sensitivity. Typical sensitivities for a 1-percent change in absorption (0.0044 absorbance units) are 0.2 and 0.5 μg Pb/ml for the 217.0 and 283.3 nm lines, respectively.

2.3 Precision. The within-laboratory precision, as measured by the coefficient of variation ranges from 0.2 to 9.5 percent relative to a run-mean concentration. These values were based on tests conducted at a gray iron foundry, a lead storage battery manufacturing plant, a secondary lead smelter, and a lead recovery furnace of an alkyl lead manufacturing plant. The concentrations encountered during these tests ranged from 0.61 to 123.3 mg Pb/m^3.

2.4 Interferences. Sample matrix effects may interfere with the analysis for Pb by flame atomic absorption. If this interference is suspected, the analyst may confirm the presence of these matrix effects and frequently eliminate the interference by using the Method of Standard Additions.

High concentrations of copper may interfere with the analysis of Pb at 217.0 nm. This interference can be avoided by analyzing the samples at 283.3 nm.

3. *Apparatus.*

3.1 Sampling Train. A schematic of the sampling train is shown in Figure 12-1; it is similar to the Method 5 train. The sampling train consists of the following components:

3.1.1 Probe Nozzle, Probe Liner, Pitot Tube, Differential Pressure Gauge, Filter Holder, Filter Heating System, Metering System, Barometer, and Gas Density Determination Equipment. Same as Method 5, Sections 2.1.1 to 2.1.6 and 2.1.8 to 2.1.10, respectively.

3.1.2 Impingers. Four impingers connected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, use the Greenburg-Smith design, modified by replacing the tip with a 1.3 cm (½ in.) ID glass tube extending to about 1.3 cm (½ in.) from the bottom of the flask. For the second impinger, use the Greenburg-Smith design with the standard tip. Place a thermometer, capable of measuring temperature to within 1°C (2°F) at the outlet of the fourth impinger for monitoring purposes.

[Appendix A, Method 12]

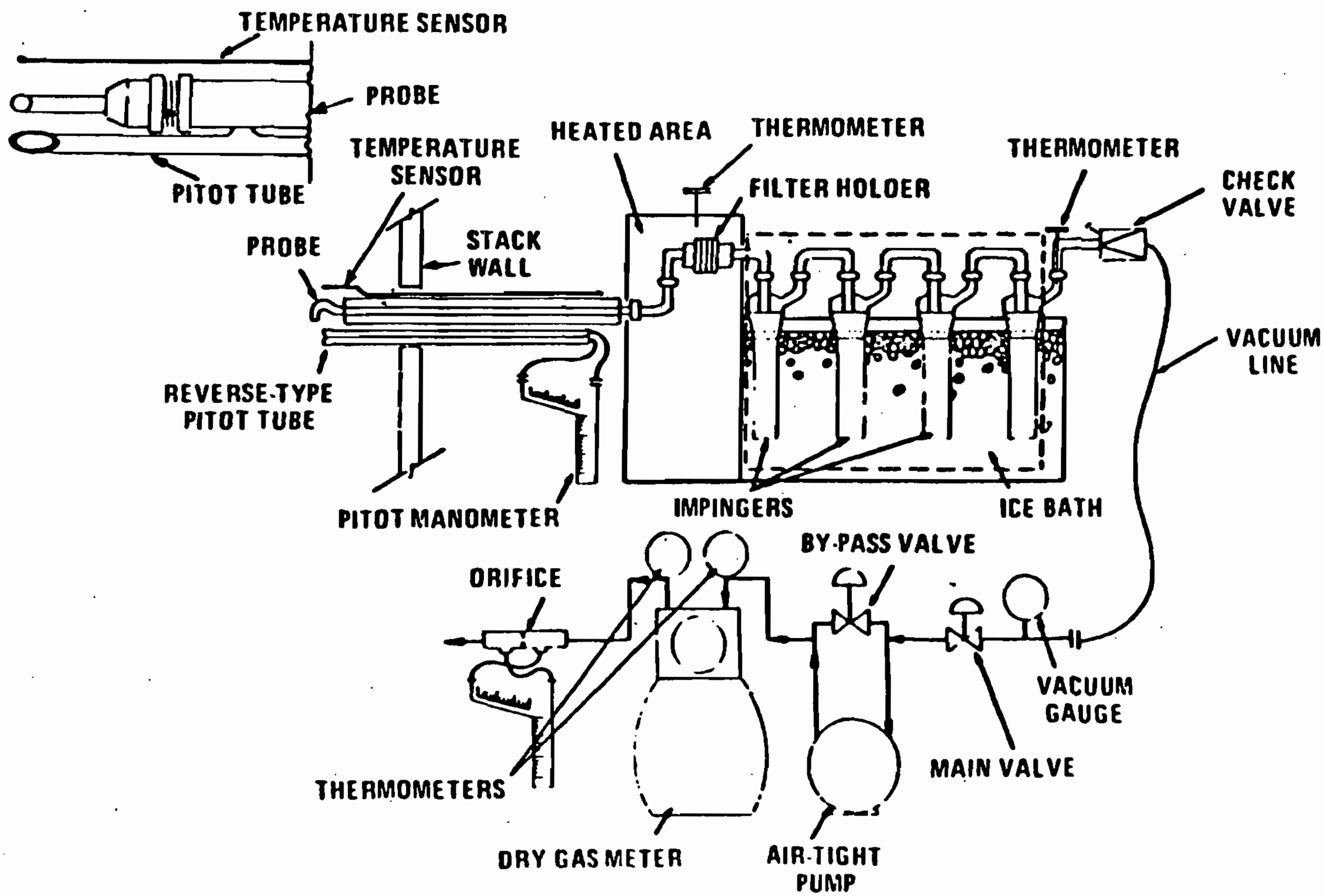

Figure 12-1. Inorganic lead sampling train.

3.2 Sample Recovery. The following items are needed:

3.2.1 Probe-Liner and Probe-Nozzle Brushes, Petri Dishes, Plastic Storage Containers, and Funnel and Rubber Policeman. Same as Method 5, Sections 2.2.1, 2.2.4, 2.2.6, and 2.2.7, respectively.

3.2.2 Wash Bottles. Glass (2).

3.2.3 Sample Storage Containers. Chemically resistant, borosilicate glass bottles, for 0.1 nitric acid (HNO_3) impinger and probe solutions and washes, 1000-ml. Use screw-cap liners that are either rubber-backed Teflon* or leak-free and resistant to chemical attack by 0.1 N HNO_3. (Narrow mouth glass bottles have been found to be less prone to leakage.)

3.2.4 Graduated Cylinder and/or Balance. To measure condensed water to within 2 ml or 1 g. Use a graduated cylinder that has a minimum capacity of 500 ml, and subdivisions no greater than 5 ml. (Most laboratory balances are capable of weighing to the nearest 0.5 g or less.)

3.2.5 Funnel. Glass, to aid in sample recovery.

3.3 Analysis. The following equipment is needed:

3.3.1 Atomic Absorption Spectrophotometer. With lead hollow cathode lamp and burner for air/acetylene flame.

3.3.2 Hot Plate.

3.3.3 Erlenmeyer Flasks. 125-ml, 24/40 $.

3.3.4 Membrane Filters. Millipore SCWPO 4700 or equivalent.

3.3.5 Filtration Apparatus. Millipore vacuum filtration unit, or equivalent, for use with the above membrane filter.

3.3.6 Volumetric Flasks. 100-ml, 250-ml, and 1000-ml.

4. *Reagents.*

4.1 Sampling. The reagents used in sampling are as follows:

4.1.1 Filter. Gelman Spectro Grade, Reeve Angel 934 AH, MSA 1106 BH, all with lot assay for Pb, or other high-purity glass fiber filters, without organic binder, exhibiting at least 99.95 percent efficiency (<0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. Conduct the filter efficiency test using ASTM Standard Method D2986-71 (incorporated by reference—see § 60.17) or use test data from the supplier's quality control program.

4.1.2 Silica Gel, Crushed Ice, and Stopcock Grease. Same as Method 5, Section 3.1.2, 3.1.4, and 3.1.5, respectively.

4.1.3 Water. Deionized distilled, to conform to ASTM Specification D1193-77 (incorporated by reference—see § 60.17), Type 3. If high concentrations of organic matter are not expected to be present, the analyst may delete the potassium permanganate test for oxidizable organic matter.

4.1.4 Nitric Acid, 0.1 N. Dilute 6.5 ml of concentrated HNO_3 to 1 liter with deionized distilled water. (It may be desirable to run blanks before field use to eliminate a high blank on test samples.)

4.2 Pretest Preparation. 6 N HNO_3 is needed. Dilute 390 ml of concentrated HNO_3 to 1 liter with deionized distilled water.

4.3 Sample Recovery. 0.1 N HNO_3 (same as 4.1.4 above) is needed for sample recovery.

4.4 Analysis. The following reagents are needed for analysis (use ACS reagent grade chemicals or equivalent, unless otherwise specified):

4.4.1 Water. Same as 4.1.3 above.

4.4.2 Nitric Acid. Concentrated.

4.4.3 Nitric Acid, 50 percent (V/V). Dilute 500 ml of concentrated HNO_3 to 1 liter with deionized distilled water.

4.4.4 Stock Lead Standard Solution, 1000 μg Pb/ml. Dissolve 0.1598 g of lead nitrate [$Pb(NO_3)_2$] in about 60 ml of deionized distilled water, add 2 ml concentrated HNO_3, and dilute to 100 ml with deionized distilled water.

4.4.5 Working Lead Standards. Pipet 0.0, 1.0, 2.0, 3.0, 4.0, and 5.0 ml of the stock lead standard solution (4.4.4) into 250-ml volumetric flasks. Add 5 ml of concentrated HNO_3 to each flask and dilute to volume with deionized distilled water. These working standards contain 0.0, 4.0, 8.0, 12.0, 16.0, and 20.0 μg Pb/ml, respectively. Prepare, as needed, additional standards at other concentrations in a similar manner.

4.4.6 Air. Suitable quality for atomic absorption analysis.

4.4.7 Acetylene. Suitable quality for atomic absorption analysis.

4.4.8 Hydrogen Peroxide, 3 percent (V/V). Dilute 10 ml of 30 percent H_2O_2 to 100 ml with deionized distilled water.

5. *Procedure.*

5.1 Sampling. The complexity of this method is such that, in order to obtain reliable results, testers should be trained and experienced with the test procedures.

5.1.1 Pretest Preparation. Follow the same general procedure given in Method 5, Section 4.1.1, except the filter need not be weighed.

5.1.2 Preliminary Determinations. Follow the same general procedure given in Method 5, Section 4.1.2.

5.1.3 Preparation of Collection Train. Follow the same general procedure given in Method 5, Section 4.1.3, except place 100 ml of 0.1 HNO_3 in each of the first two impingers, leave the third impinger empty, and transfer approximately 200 to 300 g of preweighed silica gel from its container to the fourth impinger. Set up the train as shown in Figure 12-1.

5.1.4 Leak-Check Procedures. Follow the general leak-check procedures given in Method 5, Sections 4.1.4.1. (Pretest Leak-Check), 4.1.4.2 (Leak-Checks During the Sample Run), and 4.1.4.3 (Post-Test Leak-Check).

5.1.5 Sampling Train Operation. Follow the same general procedure given in Method 5, Section 4.1.5. For each run, record the data required on a data sheet such as the one shown in EPA Method 5, Figure 5-2.

5.1.6 Calculation of Percent Isokinetic. Same as Method 5, Section 4.1.6.

5.2 *Sample Recovery.* Begin proper cleanup procedure as soon as the probe is removed from the stack at the end of the sampling period.

Allow the probe to cool. When it can be safely handled, wipe off all external particulate matter near the tip of the probe nozzle and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling down as this would create a vacuum in the filter holder, thus drawing liquid from the impingers into the filter.

Before moving the sampling train to the cleanup site, remove the probe from the sapling train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the glassware inlet where the probe was fastened and cap the inlet. Remove the umbilical cord from the last impinger and cap the impinger. The tester may use ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe and filter-impinger assembly to a cleanup area, which is clean and protected from the wind so that the chances of contaminating or losing the sample are minimized.

Inspect the train prior to and during disassembly and note any abnormal conditions. Treat the samples as follows:

5.2.1 *Container No. 1* (Filter). Carefully remove the filter from the filter holder and place it in its identified petri dish container. If it is necessary to fold the filter, do so such that the sample-exposed side is inside the fold. Carefully transfer to the petri dish any visible sample matter and/or filter fibers that adhere to the filter holder gasket by using a dry Nylon bristle brush and/or a sharp-edged blade. Seal the container.

5.2.2 *Container No. 2* (Probe). Taking care that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover sample matter or any condensate from the probe nozzle, probe fitting, probe liner, and front half of the filter holder by washing these components with 0.1 N HNO_3 and placing

*Mention of trade names or specific products does not constitute endorsement by the U.S. Environmental Protection Agency.

the wash into a glass sample storage container. Measure and record (to the nearest 2-ml) the total amount of 0.1 N HNO_3 used for each rinse. Perform the 0.1 N HNO_3 rinses as follows:

Carefully remove the probe nozzle and rinse the inside surfaces with 0.1 N HNO_3 from a wash bottle while brushing with a stainless steel, Nylon-bristle brush. Brush until the 0.1 N HNO_3 rinse shows no visible particles, then make a final rinse of the inside surface.

Brush and rinse with 0.1 N HNO_3 the inside parts of the Swagelok fitting in a similar way until no visible particles remain.

Rinse the probe liner with 0.1 N HNO_3. While rotating the probe so that all inside surfaces will be rinsed with 0.1 N HNO_3, tilt the probe and squirt 0.1 N HNO_3 into its upper end. Let the 0.1 N HNO_3 drain from the lower end into the sample container. The tester may use a glass funnel to aid in transferring liquid washes to the container. Follow the rinse with a probe brush. Hold the probe in an inclined position, squirt 0.1 N HNO_3 into the upper end of the probe as the probe brush is being pushed with a twisting action through the probe; hold the sample container underneath the lower end of the probe and catch any 0.1 N HNO_3 and sample matter that is brushed from the probe. Run the brush through the probe three times or more until no visible sample matter is carried out with the 0.1 N HNO_3 and none remains on the probe liner on visual inspection. With stainless steel or other metal probes, run the brush through in the above prescribed manner at least six times, since metal probes have small crevices in which sample matter can be entrapped. Rinse the brush with 0.1 N HNO_3 and quantitatively collect these washings in the sample container. After the brushing make a final rinse of the probe as described above.

It is recommended that two people clean the probe to minimize loss of sample. Between sampling runs, keep brushes clean and protected from contamination.

After insuring that all joints are wiped clean of silicone grease, brush and rinse with 0.1 N HNO_3 the inside of the front half of the filter holder. Brush and rinse each suface three times or more, if needed, to remove visible sample matter. Make a final rinse of the brush and filter holder. After all 0.1 N HNO_3 washings and sample matter are collected in the sample container, tighten the lid on the sample container so that the fluid will not leak out when it is shipped to the laboratory. Mark the height of the fluid level to determine whether leakage occurs during transport. Label the container to clearly identify its contents.

5.2.3 *Container No. 3* (Silica Gel). Check the color of the indicating silica gel to determine if it has been completely spent and make a notation of its condition. Transfer the silica gel from the fourth impinger to the original container and seal. The tester may use a funnel to pour the silica gel and a rubber policeman to remove the silica gel from the impinger. It is not necessary to remove the small amount of particles that may adhere to the walls and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, the tester may follow procedure for Container No. 3 under Section 5.4 (Analysis).

5.2.4 *Container No. 4* (Impingers). Due to the large quantity of liquid involved, the tester may place the impinger solutions in several containers. Clean each of the first three impingers and connecting glassware in the following manner:

1. Wipe the impinger ball joints free of silicone grease and cap the joints.

2. Rotate and agitate each impinger, so that the impinger contents might serve as a rinse solution.

3. Transfer the contents of the impingers to a 500-ml graduated cylinder. Remove the outlet ball joint cap and drain the contents through this opening. Do not separate the impinger parts (inner and outer tubes) while transferring their contents to the cylinder. Measure the liquid volume to within ±2 ml. Alternatively, determine the weight of the liquid to within ±0.5 g. Record in the log the volume or weight of the liquid present, along with a notation of any color or film observed in the impinger catch. The liquid volume or weight is needed, along with the silica gel data, to calculate the stack gas moisture content (see Method 5, Figure 5-3).

4. Transfer the contents to Container No. 4.

5. Note: In steps 5 and 6 below, measure and record the total amount of 0.1 N HNO_3 used for rinsing. Pour approximately 30 ml of 0.1 N HNO_3 into each of the first three impingers and agitate the impingers. Drain the 0.1 N HNO_3 through the outlet arm of each impinger into Container No. 4. Repeat this operation a second time; inspect the impingers for any abnormal conditions.

6. Wipe the ball joints of the glassware connecting the impingers free of silicone grease and rinse each piece of glassware twice with 0.1 N HNO_3; transfer this rinse into Container No. 4. (*Do not rinse or brush the glass-fritted filter support.*) Mark the height of the fluid level to determine whether leakage occurs during transport. Label the container to clearly identify its contents.

5.2.5 Blanks. Save 200 ml of the 0.1 N HNO_3 used for sampling and cleanup as a blank. Take the solution directly from the bottle being used and place into a glass sample container labeled "0.1 N HNO_3 blank."

5.3 Sample Preparation.

5.3.1 *Container No. 1* (Filter). Cut the filter into strips and transfer the strips and all loose particulate matter into a 125-ml Erlenmeyer flask. Rinse the petri dish with 10 ml of 50 percent HNO_3 to insure a quantitative transfer and add to the flask. (Note: If the total volume required in Section 5.3.3 is expected to exceed 80 ml, use a 250-ml Erlenmeyer flask in place of the 125-ml flask.)

5.3.2 *Containers No. 2 and No. 4* (Probe and Impingers). (Check the liquid level in Containers No. 2 and/or No. 4 and confirm as to whether or not leakage occurred during transport; note observation on the analysis sheet. If a noticeable amount of leakage had occurred, either void the sample or take steps, subject to the approval of the Administrator, to adjust the final results.) Combine the contents of Containers No. 2 and No. 4 and take to dryness on a hot plate.

5.3.3 Sample Extraction for lead. Based on the approximate stack gas particulate concentration and the total volume of stack gas sampled, estimate the total weight of particulate sample collected. Then transfer the residue from Containers No. 2 and No. 4 to the 125-ml Erlenmeyer flask that contains the filter using rubber policeman and 10 ml of 50 percent HNO_3 for every 100 mg of sample collected in the train or a minimum of 30 ml of 50 percent HNO_3 whichever is larger.

Place the Erlenmeyer flask on a hot plate and heat with periodic stirring for 30 min at a temperature just below boiling. If the sample volume falls below 15 ml, add more 50 percent HNO_3. Add 10 ml of 3 percent H_2O_2 and continue heating for 10 min. Add 50 ml of hot (80°C) deionized distilled water and heat for 20 min. Remove the flask from the hot plate and allow to cool. Filter the sample through a Millipore membrane filter or equivalent and transfer the filtrate to a 250-ml volumetric flask. Dilute to volume with deionized distilled water.

5.3.4 Filter Blank. Determine a filter blank using two filters from each lot of filters used in the sampling train. Cut each filter into strips and place each filter in a separate 125-ml Erlenmeyer flask. Add 15 ml of 50 percent HNO_3 and treat as described in Section 5.3.3 using 10 ml of 3 percent H_2O_2 and 50 ml of hot, deionized distilled water. Filter and dilute to a toal volume of 100 ml using deionized distilled water.

5.3.5 0.1 N HNO_3 Blank. Take the entire 200 ml of 0.1 N HNO_3 to dryness on a steam bath, add 15 ml of 50 percent HNO_3, and treat as described in Section 5.3.3 using 10 ml of 3 percent H_2O_2 and 50 ml of hot,

[Appendix A, Method 12]

deionized distilled water. Dilute to a total volume of 100 ml using deionized distilled water.

5.4 Analysis.

5.4.1 Lead Determination. Calibrate the spectrophotometer as described in Section 6.2 and determine the absorbance for each source sample, the filter blank, and 0.1 N HNO_3 blank. Analyze each sample three times in this manner. Make appropriate dilutions, as required, to bring all sample Pb concentrations into the linear absorbance range of the spectrophotometer.

If the Pb concentration of a sample is at the low end of the calibration curve and high accuracy is required, the sample can be taken to dryness on a hot plate and the residue dissolved in the appropriate volume of water to bring it into the optimum range of the calibration curve.

5.4.2 Check for Matrix Effects on the Lead Results. Since the analysis for Pb by atomic absorption is sensitive to the chemical composition and to the physical properties (viscosity, pH) of the sample (matrix effects), the analyst shall check at least one sample from each source using the method of additions as follows:

Add or spike an equal volume of standard solution to an aliquot of the sample solution, then measure the absorbance of the resulting solution and the absorbance of an aliquot of unspiked sample.

Next, calculate the Pb concentration C_s in μg/ml of the sample solution by using the following equation:

$$C_s = C_a \frac{A_s}{A_t - A_s} \qquad \text{Eq. 12-1}$$

Where:

C_a=Pb concentration of the standard solution, μg/ml.

A_s=Absorbance of the sample solution.

A_t=Absorbance of the spiked sample solution.

Volume corrections will not be required if the solutions as analyzed have been made to the same final volume. Therefore, C_s and C_a represent Pb concentration before dilutions.

Method of additions procedures described on pages 9-4 and 9-5 of the section entitled "General Information" of the Perkin Elmer Corporation Atomic Absorption Spectrophotometry Manual, Number 303-0152 (see Section 9.1) may also be used. In any event, if the results of the method of additions procedure used on the single source sample do not agree to within 5 percent of the value obtained by the routine atomic absorption analysis, then reanalyze all samples from the source using a method of additions procedure.

5.4.3 *Container No. 3* (Silica Gel). The tester may conduct this step in the field. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

6. *Calibration.*

Maintain a laboratory log of all calibrations.

6.1 Sampling Train Calibration. Calibrate the sampling train components according to the indicated sections of Method 5: Probe Nozzle (Section 5.1); Pitot Tube (Section 5.2); Metering System (Section 5.3); Probe Heater (Section 5.4); Temperature Gauges (Section 5.5); Leak-Check of the Metering System (Section 5.6); and Barometer (Section 5.7).

6.2 Spectrophotometer. Measure the absorbance of the standard solutions using the instrument settings recommended by the spectrophotometer manufacturer. Repeat until good agreement (±3 percent) is obtained between two consecutive readings. Plot the absorbance (y-axis) versus concentration in μg Pb/ml (x-axis). Draw or compute a straight line through the linear portion of the curve. Do not force the calibration curve through zero, but if the curve does not pass through the origin or at least lie closer to the origin than ±0.003 absorbance units, check for incorrectly prepared standards and for curvature in the calibration curve.

To determine stability of the calibration curve, run a blank and a standard after every five samples and recalibrate, as necessary.

7. *Calculations.*

7.1 Dry Gas Volume. Using the data from this test, calculate $V_{m(std)}$, the total volume of dry gas metered corrected to standard conditions (20°C and 760 mm Hg), by using Equation 5-1 of Method 5. If necessary, adjust $V_{m(std)}$ for leakages as outlined in Section 6.3 of Method 5. See the field data sheet for the average dry gas meter temperature and average orifice pressure drop.

7.2 Volume of Water Vapor and Moisture Content. Using data obtained in this test and Equations 5-2 and 5-3 of Method 5, calculate the volume of water vapor $V_{w(std)}$ and the moisture content B_{ws} of the stack gas.

7.3 Total Lead in Source Sample. For each source sample correct the average absorbance for the contribution of the filter blank and the 0.1 N HNO_3 blank. Use the calibration curve and this corrected absorbance to determine the μg Pb concentration in the sample aspirated into the spectrophotometer. Calculate the total Pb content C^*_{Pb} (in μg) in the original source sample; correct for all the dilutions that were made to bring the Pb concentration of the sample into the linear range of the spectrophotometer.

7.4 Lead Concentration. Calculate the stack gas Pb concentration C_{Pb} in mg/dscm as follows:

$$C_{Pb} = K \frac{C^*_{Pb}}{V_{m(std)}} \qquad \text{Eq. 12-2}$$

Where:

K=0.001 mg/μg for metric units.

=2.205 lb/μg $\times 10^{-9}$ for English units.

7.5 Isokinetic Variation and Acceptable Results. Same as Method 5, Sections 6.11 and 6.12, respectively. To calculate v_s, the average stack gas velocity, use Equation 2-9 of Method 2 and the data from this field test.

8. *Alternative Test Methods for Inorganic Lead.*

8.1 Simultaneous Determination of Particulate and Lead Emissions. The tester may use Method 5 to simultaneously determine Pb provided that (1) he uses acetone to remove particulate from the probe and inside of the filter holder as specified by Method 5, (2) he uses 0.1 N HNO_3 in the impingers, (3) he uses a glass fiber filter with a low Pb background, and (4) he treats and analyzes the entire train contents, including the impingers, for Pb as described in Section 5 of this method.

8.2 Filter Location. The tester may use a filter between the third and fourth impinger provided that he includes the filter in the analysis for Pb.

8.3 In-stack Filter. The tester may use an in-stack filter provided that (1) he uses a glass-lined probe and at least two impingers, each containing 100 ml of 0.1 N HNO_3, after the in-stack filter and (2) he recovers and analyzes the probe and impinger contents for Pb. Recover sample from the nozzle with acetone if a particulate analysis is to be made.

9. Bibliography

9.1 Perkin Elmer Corporation. Analytical Methods for Atomic Absorption Spectrophotometry. Norwalk, Connecticut. September 1976.

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9.3 Klein, R. and C. Hach. Standard Additions — Uses and Limitations in

Spectrophotometric Analysis. *Amer. Lab.* *9.21-27, 1977.*

9.4 Mitchell, W.J. and M.R. Midgett. Determining Inorganic and Alkyl Lead Emissions from Stationary Sources. U.S. Environmental Protection Agency, Emission Monitoring and Support Laboratory. Research Triangle Park, N.C. (Presented at National APCA Meeting, Houston. June 26, 1978).

9.5 Same as Method 5, Citations 2 to 5 and 7 of Section 7.

[Appendix A, Method 13A]

EPA METHOD 101

Determination of Particulate and Gaseous Mercury Emissions from Chlor-Alkali Plants - Air Streams

EPA METHOD 101A

Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators

Date: 5/31/89
Revision: 0

METHOD 101—DETERMINATION OF PARTICULATE AND GASEOUS MERCURY EMISSIONS FROM CHLOR-ALKALI PLANTS—AIR STREAMS

1. *Applicability and Principle*—1.1 *Applicability.* This method applies to the determination of particulate and gaseous mercury (Hg) emissions from chlor-alkali plants and other sources (as specified in the regulations), where the carrier-gas stream in the duct or stack is principally air.

1.2 *Principle.* Particulate and gaseous Hg emissions are withdrawn isokinetically from the source and collected in acidic iodine monochloride (ICl) solution. The Hg collected (in the mercuric form) is reduced to elemental Hg, which is then aerated from the solution into an optical cell and measured by atomic absorption spectrophotometry.

2. *Range and Sensitivity*—2.1 *Range.* After initial dilution, the range of this method is 0.5 to 120 μg Hg/ml. The upper limit can be extended by further dilution of the sample.

2.2 *Sensitivity.* The sensitivity of this method depends on the recorder/spectrophotometer combination selected.

3. *Interfering Agents*—3.1 *Sampling.* SO_2 reduces ICl and causes premature depletion of the ICl solution.

3.2 *Analysis.* ICl concentrations greater than 10^{-4} molar inhibit the reduction of the Hg (II) ion in the aeration cell. Condensation of water vapor on the optical cell windows causes a positive interference.

4. *Precision and Accuracy*—The following estimates are based on collaborative tests, wherein 13 laboratories performed duplicate analyses on two Hg-containing samples from a chlor-alkali plant and on one laboratory-prepared sample of known Hg concentration. The concentration ranged from 2 to 65 μg Hg/ml.

4.1 *Precision.* The estimated within-laboratory and between-laboratory standard deviations are 1.6 and 1.8 μg Hg/ml, respectively.

4.2 *Accuracy.* The participating laboratories that analyzed a 64.3-μg Hg/ml (in 0.1 M ICl) standard obtained a mean of 63.7 μg Hg/ml.

5. *Apparatus*—5.1 *Sampling Train.* A schematic of the sampling train is shown in Figure 101-1; it is similar to the Method 5 train (mention of Method 5 refers to Parts 60 of 40 CFR). The sampling train consists of the following components:

5.1.1 *Probe Nozzle, Pitot Tube, Differential Pressure Gauge, Metering System, Barometer, and Gas Density Determination Equipment.* Same as Method 5, Sections 2.1.1, 2.1.3, 2.1.4, 2.1.8, 2.1.9, and 2.1.10, respectively.

5.1.2 *Probe Liner.* Borosilicate or quartz glass tubing. The tester may use a heating system capable of maintaining a gas temperature of 120±14° C (248±25° F) at the probe exit during sampling to prevent water condensation.

NOTE: Do not use metal probe liners.

5.1.3 *Impingers.* Four Greenburg-Smith impingers connected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, the tester may use impingers that are modified by replacing the tip with a 13-mm-ID (0.5-in.) glass tube extending to 13 mm (0.5 in.) from the bottom of the flask.

5.1.4 *Acid Trap.* Mine Safety Appliances air line filter, Catalog number 81857, with acid absorbing cartridge and suitable connections, or equivalent.

5.2 *Sample Recovery.* The following items are needed:

5.2.1 *Glass Sample Bottles.* Leakless, with Teflon-lined caps, 1000- and 100-ml.

5.2.2 *Graduated Cylinder.* 250-ml.

5.2.3 *Funnel and Rubber Policeman.* To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

5.2.4 *Funnel.* Glass, to aid in sample recovery.

5.3 *Sample Preparation and Analysis.* The following equipment is needed:

5.3.1 *Atomic Absorption Spectrophotometer.* Perkin-Elmer 303, or equivalent, containing a hollow-cathode mercury lamp and the optical cell described in Section 5.3.2.

5.3.2 *Optical Cell.* Cylindrical shape with quartz end windows and having the dimensions shown in Figure 101-2. Wind the cell with approximately 2 meters of 24-gauge nichrome heating wire, and wrap with fiberglass insulation tape or equivalent; do not let the wires touch each other.

5.3.3 *Aeration Cell.* Constructed according to the specifications in Figure 101-3. Do not use a glass frit as a substitute for the blown glass bubbler tip shown in Figure 101-3.

5.3.4 *Recorder.* Matched to output of the spectrophotometer described in Section 5.3.1.

5.3.5 *Variable Transformer.* To vary the voltage on the optical cell from 0 to 40 volts.

5.3.6 *Hood.* For venting optical cell exhaust.

5.3.7 *Flowmetering Valve.*

5.3.8 *Flowmeter.* Rotameter or equivalent, capable of measuring a gas flow of 1.5 liters/min.

5.3.9 *Aeration Gas Cylinder.* Nitrogen or dry, Hg-free air, equipped with a single-stage regulator.

5.3.10 *Connecting Tubing.* Use glass tubing (ungreased ball- and socket-connections are recommended) for all tubing connections between the solution cell and the optical cell; do not use Tygon tubing, other types of flexible tubing, or metal tubing as substitutes. The tester may use Teflon, steel, or copper tubing between the nitrogen tank and flowmetering valve (5.3.7), and Tygon, gum, or rubber tubing between the flowmetering valve and the aeration cell.

5.3.11 *Flow Rate Calibration Equipment.* Bubble flowmeter or wet test meter for measuring a gas flow rate of 1.5±0.1 liters/min.

5.3.12 *Volumetric Flasks.* Class A with penny head standard taper stoppers; 100-, 250-, 500- and 1000-ml.

5.3.13 *Volumetric Pipets.* Class A; 1-, 2-, 3-, 4-, and 5-ml.

5.3.14 *Graduated Cylinder.* 50-ml.

5.3.15 *Magentic Stirrer.* General-purpose laboratory type.

5.3.16 *Magnetic Stirring Bar.* Teflon-coated.

5.3.17 *Balance.* Capable of weighing to ±0.5 g.

5.4 *Alternative Analytical Apparatus.* Alternative systems are allowable as long as they meet the following criteria:

5.4.1 A linear calibration curve is generated and two consecutive samples of the same aliquot size and concentration agree within 3 percent of their average.

5.4.2 A minimum of 95 percent of the spike is recovered when an aliquot of a source sample is spiked with a known concentration of mercury (II) compound.

5.4.3 The reducing agent should be added after the aeration cell is closed.

5.4.4 The aeration bottle bubbler should not contain a frit.

5.4.5 Any Tygon used should be as short as possible and conditioned prior to use until blanks and standards yield linear and reproducible results.

5.4.6 If manual stirring is done before aeration, it should be done with the aeration cell closed.

5.4.7 A drying tube should not be used unless it is conditioned as the Tygon above.

6. *Reagents*—Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

6.1 *Sampling and Recovery.* The reagents used in sampling and recovery are as follows:

6.1.1 *Water.* Deionized distilled, meeting ASTM Specifications for Type I Reagent Water—ASTM Test Method D1193-77 (incorporated by reference—see § 61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the $KMnO_4$ test for oxidizable organic matter. Use this water in all dilutions and solution preparations.

6.1.2 *Nitric Acid* (HNO_3), 50 Percent (V/V). Mix equal volumes of concentrated HNO_3 and deionized distilled water, being careful to slowly add the acid to the water.

6.1.3 *Silica Gel.* Indicating type, 6- to 16-mesh. If previously used, dry at 175° C (350° F) for 2 hours. The tester may use new silica gel as received.

6.1.4 *Potassium Iodide (KI) Solution, 25 Percent.* Dissolve 250 g of KI in deionized distilled water and dilute to 1 liter.

6.1.5 *Iodine Monochloride (ICl) Stock Solution, 1.0 M.* To 800 ml of 25 percent KI solution, add 800 ml of concentrated hydrochloric acid (HCl). Cool to room temperature. With vigorous stirring, slowly add 135 g of potassium iodate (KIO_3) and stir until all free iodine has dissolved. A clear orange-red solution occurs when all the KIO_3 has been added. Cool to room temperature and dilute to 1800 ml with deionized distilled water. Keep the solution in amber glass bottles to prevent degradation.

6.1.6 *Absorbing Solution, 0.1 M ICl.* Dilute 100 ml of the 1.0 M ICl stock solution to 1 liter with deionized distilled water. Keep the solution in amber glass bottles and in darkness to prevent degradation. This reagent is stable for at least 2 months.

6.2 *Sample Preparation and Analysis.* The reagents needed are listed below:

6.2.1 *Tin (II) Solution.* Prepare fresh daily and keep sealed when not being used. Completely dissolve 20 g of tin (II) chloride [or 25 g of tin (II) sulfate] crystals (Baker Analyzed reagent grade or any other brand that will give a clear solution) in 25 ml of concentrated HCl. Dilute to 250 ml with deionized distilled water. Do not substitute HNO_3, H_2SO_4, or other strong acids for the HCl.

6.2.2 *Mercury Stock Solution, 1 mg Hg/ml.* Prepare and store all mercury standard solutions in borosilicate glass containers. Completely dissolve 0.1354 g of mercury (II) chloride in 75 ml of deionized distilled water in a 100 ml glass volumetric flask. Add 10 ml of concentrated HNO_3, and adjust the volume to exactly 100 ml with deionized distilled water. Mix thoroughly. This solution is stable for at least 1 month.

6.2.3 *Sulfuric Acid, 5 Percent (V/V).* Dilute 25 ml of concentrated H_2SO_4 to 500 ml with deionized distilled water.

6.2.4 *Intermediate Mercury Standard Solution, 10 μg Hg/ml.* Prepare fresh weekly. Pipet 5.0 ml of the mercury stock solution (6.2.2) into a 500-ml glass volumetric flask and add 20 ml of the 5 percent H_2SO_4 solution. Dilute to exactly 500 ml with deionized distilled water. Thoroughly mix the solution.

6.2.5 *Working Mercury Standard Solution, 200 ng Hg/ml.* Prepare fresh daily. Pipet 5.0 ml from the "Intermediate Mercury Standard Solution" (6.2.4) into a 250-ml volumetric glass flask. Add 10 ml of the 5 percent H_2SO_4 and 2 ml of the 0.1 M ICl absorbing solution taken as a blank (7.2.3) and dilute to 250 ml with deionized distilled water. Mix thoroughly.

7. *Procedure*—7.1 *Sampling.* Because of the complexity of this method, testers should be trained and experienced with the test procedures to assure reliable results. Since the amount of Hg that is collected generally is small, the method must be carefully applied to prevent contamination or loss of sample.

7.1.1 *Pretest Preparation.* Follow the general procedure given in Method 5, Section 4.1.1, except omit the directions on the filter.

7.1.2 *Preliminary Determinations.* Follow the general procedure given in Method 5, Section 4.1.2, except as follows: Select a nozzle size based on the range of velocity heads to assure that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates below 28 liters/min (1.0 cfm).

Obtain samples over a period or periods that accurately determine the maximum emissions that occur in a 24-hour period. In the case of cyclic operations, run sufficient tests for the accurate determination of the emissions that occur over the duration of the cycle. A minimum sample time of 2 hours is recommended. In some instances, high Hg or high SO_2 concentrations make it impossible to sample for the desired minimum time. This is indicated by reddening (liberation of free iodine) in the first impinger. In these cases, the tester may divide the sample run into two or more subruns to insure that the absorbing solution is not depleted.

7.1.3 *Preparation of Sampling Train.* Clean all glassware [probe, impingers, and connectors] by rinsing with 50 percent HNO_3, tap water, 0.1 M ICl, tap water, and finally deionized distilled water. Place 100 ml of 0.1 M ICl in each of the first three impingers. Take care to prevent the absorbing solution from contacting any greased surfaces. Place approximately 200 g of preweighed silica gel in the fourth impinger. The tester may use more silica gel, but should be careful to ensure that it is not entrained and carried out from the impinger during sampling. Place the silica gel container in a clean place for later use in the sample recovery. Alternatively, determine and record the weight of the silica gel plus impinger to the nearest 0.5 g.

Install the selected nozzle using a Viton A O-ring when stack temperatures are less than 260° C (500° F). Use a fiberglass string gasket if temperatures are higher. See APTD-0576 (Citation 9 in Section 10) for details. Other connecting systems using either 316 stainless steel or Teflon ferrules may be used. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point. Assemble the train as shown in Figure 101-1, using (if necessary) a very light coat of silicone grease on all ground glass joints. Grease only the outer portion (see APTD-0576) to avoid possibility of contamination by the silicone grease.

NOTE: An empty impinger may be inserted between the third impinger and the silica gel to remove excess moisture from the sample stream.

After the sampling train has been assembled, turn on and set the probe, if applicable, at the desired operating temperature. Allow time for the temperatures to stabilize. Place crushed ice around the impingers.

7.1.4 *Leak-Check Procedures.* Follow the leak-check procedures outlined in Method 5, Sections 4.1.4.1 (Pretest Leak Check), 4.1.4.2 (Leak Checks During Sample Run), and 4.1.4.3 (Post-Test Leak Check).

7.1.5 *Mercury Train Operation.* Follow the general procedure given in Method 5, Section 4.1.5. For each run, record the data required on a data sheet such as the one shown in Figure 101-4.

7.1.6 *Calculation of Percent Isokinetic.* Same as Method 5, Section 4.1.6.

7.2 *Sample Recovery.* Begin proper clean up procedure as soon as the probe is removed from the stack at the end of the sampling period.

Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling. Capping would create a vacuum and draw liquid out from the impingers.

Before moving the sampling train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe and impinger assembly to a cleanup area that is clean, protected from the wind, and free of Hg contamination. The ambient air in laboratories located in the immediate vicinity of Hg-using facilities is not normally free of Hg contamination.

Inspect the train before and during assembly, and note any abnormal conditions. Treat the sample as follows:

7.2.1 *Container No. 1* (Impinger and Probe). Using a graduated cylinder, measure the liquid in the first three impingers to within ±1 ml. Record the volume of liquid present (e.g., see Figure 5-3 of Method 5). This information is needed to calculate the moisture content of the effluent gas. (Use only glass storage bottles and graduated cylinders that have been precleaned as in Section 7.1.3.) Place the contents of the first three impingers into a 1000-ml glass sample bottle.

Taking care that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover the Hg (and any condensate) from the probe nozzle, probe fitting, and probe liner as follows: Rinse these components with two

50-ml portions of 0.1 M ICl. Next, rinse the probe nozzle, fitting and liner, and each piece of connecting glassware between the probe liner and the back half of the third impinger with a maximum of 400 ml of deionized distilled water. Add all washings to the 1000-ml glass sample bottle containing the liquid from the first three impingers.

After all washings have been collected in the sample container, tighten the lid on the container to prevent leakage during shipment to the laboratory. Mark the height of the liquid to determine later whether leakage occurred during transport. Label the container to clearly identify its contents.

7.2.2 *Container No. 2* (Silica Gel). Note the color of the indicating silica gel to determine whether it has been completely spent and make a notation of its condition. Transfer the silica gel from its impinger to its original container and seal. The tester may use as aids a funnel to pour the silica gel and a rubber policeman to remove the silica gel from the impinger. The small amount of particles that may adhere to the impinger wall need not be removed. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

7.2.3 *Container No. 3* (Absorbing Solution Blank). For a blank, place 50 ml of the 0.1 M ICl absorbing solution in a 100-ml sample bottle. Seal the container. Use this blank to prepare the working mercury standard solution (6.2.5).

7.3 *Sample Preparation.* Check the liquid level in each container to see whether liquid was lost during transport. If a noticeable amount of leakage occurred, either void the sample or use methods subject to the approval of the Administrator to account for the losses. Then follow the procedures below:

7.3.1 *Container No. 1* (Impinger and Probe). Carefully transfer the contents of Container No. 1 into a 1000-ml volumetric flask and adjust the volume to exactly 1000 ml with deionized distilled water.

7.3.2 *Dilutions.* Pipet a 2-ml aliquot from the diluted sample from 7.3.1 into a 250-ml volumetric flask. Add 10 ml of 5 percent H_2SO_4 and adjust the volume to exactly 250 ml with deionized distilled water. These solutions are stable for at least 72 hours.

NOTE: The dilution factor will be 250/2 for this solution.

7.4 *Analysis.* Calibrate the spectrophotometer and recorder and prepare the calibration curve as described in Sections 8.1 to 8.4.

7.4.1 *Mercury Samples.* Repeat the procedure used to establish the calibration curve with appropriately sized aliquots (1 to 5 ml) of each of the diluted samples (from Section 7.3.2) until two consecutive peak heights agree within ±3 percent of their average value. The peak maximum of an aliquot (except the 5-ml aliquot) must be greater than 10 percent of the recorder full scale. If the peak maximum of a 1.0-ml aliquot is off scale on the recorder, further dilute the original source sample to bring the Hg concentration into the calibration range of the spectrophotometer.

Run a blank and standard at least after every five samples to check the spectrophotometer calibration; recalibrate as necessary.

It is also recommended that at least one sample from each stack test be checked by the method of standard additions to confirm that matrix effects have not interfered in the analysis.

7.4.2 *Container No. 2* (Silica Gel). Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. (This step may be conducted in the field.)

8. *Calibration and Standards*—Before use, clean all glassware, both new and used, as follows: brush with soap and water, liberally rinse with tap water, soak for 1 hour in 50 percent HNO_3, and then rinse with deionized distilled water.

8.1 *Flow Calibration.* Assemble the aeration system as shown in Figure 101-5. Set the outlet pressure on the aeration gas cylinder regulator to a minimum pressure of 500 mm Hg (10 psi), and use the flowmetering valve and a bubble flowmeter or wet test meter to obtain a flow rate of 1.5±0.1 liters/min through the aeration cell. After the flow calibration is complete, remove the bubble flowmeter from the system.

8.2 *Optical Cell Heating System Calibration.* Using a 50-ml graduated cylinder, add 50 ml of deionized distilled water to the bottle section of the aeration cell and attach the bottle section to the bubbler section of the cell. Attach the aeration cell to the optical cell; and while aerating at 1.5 liters/min, determine the minimum variable transformer setting necessary to prevent condensation of moisture in the optical cell and in the connecting tubing. (This setting should not exceed 20 volts.)

8.3 *Spectrophotometer and Recorder Calibration.* The mercury response may be measured by either peak height or peak area.

NOTE: The temperature of the solution affects the rate at which elemental Hg is released from a solution and, consequently, it affects the shape of the absorption curve (area) and the point of maximum absorbance (peak height). Therefore, to obtain reproducible results, bring all solutions to room temperature before use.

Set the spectrophotometer wavelength at 253.7 nm, and make certain the optical cell is at the minimum temperature that will prevent water condensation. Then set the recorder scale as follows: Using a 50-ml graduated cylinder, add 50 ml of deionized distilled water to the aeration cell bottle and pipet 5.0 ml of the working mercury standard solution into the aeration cell.

NOTE: Always add the Hg-containing solution to the aeration cell after the 50 ml of deionized distilled water.

Place a Teflon-coated stirring bar in the bottle. Before attaching the bottle section to the bubbler section of the aeration cell, make certain that (1) the aeration cell exit arm stopcock (Figure 101-3) is closed (so that Hg will not prematurely enter the optical cell when the reducing agent is being added) and (2) there is no flow through the bubbler. If conditions (1) and (2) are met, attach the bottle section to the bubbler section of the aeration cell through the side arm of the cell and immediately stopper the side arm. Stir the solution for 15 sec, turn on the recorder, open the aeration cell exit arm stopcock, and then immediately initiate aeration with continued stirring. Determine the maximum absorbance of the standard and set this value to read 90 percent of the recorder full scale.

[8.3 amended by 49 FR 35769, September 12, 1984]

8.4 Calibration Curve. After setting the recorder scale, repeat the procedure in section 8.3 using 0.0-, 1.0-, 2.0-, 3.0-, 4.0-, and 5.0-ml aliquots of the working standard solution (final amount of Hg in the aeration cell is 0, 200, 400, 600, 800, and 1000 ng, respectively). Repeat this procedure on each aliquot size until two consecutive peaks agree within 3 percent of their average value. (Note: To prevent Hg carryover from one sample to another, do not close the aeration gas tank valve and do not disconnect the aeration cell from the optical cell until the recorder pen has returned to the baseline.) It should not be necessary to disconnect the aeration gas inlet line from the aeration cell when changing samples. After separating the bottle and bubbler sections of the aeration cell, place the bubbler section into a 600-ml beaker containing approximately 400 ml of deionized distilled water. Rinse the bottle section of the aeration cell with a stream of deionized distilled water to remove all traces of the tin (II) reducing agent. Also, to prevent the loss of Hg before aeration, remove all traces of the reducing agent between samples by washing with deionized distilled water. It will be necessary, however, to wash the aeration cell parts with concentrated HCl if any of the following conditions occur: (1) A white film appears on any inside surface of the aeration cell, (2) the calibration curve changes suddenly, or (3) the replicate samples do not yield reproducible results.

Subtract the average peak height (or peak area) of the blank (0.0-ml aliquot) — which should be less than 2 percent of recorder full scale — from the averaged peak heights of the 1.0-, 2.0-, 3.0-, 4.0-, and 5.0-ml aliquot standards. If the blank absorbance is greater than 2 percent of full-scale, the probable cause is Hg contamination of a reagent or carry-over of Hg from a previous sample. Plot the corrected peak height of each standard solution versus the corresponding final total Hg weight in the aeration cell (in ng) and draw the best-fit straight line. This line should either pass through the origin or pass through a point no further from the origin that ± 2 percent of the recorder full scale. If the line does not pass through or very near to the origin, check for nonlinearity of the curve and for incorrectly prepared standards.

8.5 Sampling Train Calibration. Calibrate the sampling train components according to the procedures outlined in the following sections of Method 5: Section 5.1 (Probe Nozzle), Section 5.2 (Pitot Tube), Section 5.3 (Metering System), Section 5.4 (Probe Heater), Section 5.5 (Temperature Gauges), Section 5.7 (Barometer). Note that the leak-check described in Section 5.6 of Method 5 applies to this method.

9. Calculations — 9.1 Dry Gas Volume. Using the data from this test, calculate $V_{m(std)}$, the dry gas sample volume at standard conditions (corrected for leakage, if necessary) as outlined in Section 6.3 of Method 5.

9.2 Volume of Water Vapor and Moisture Content. Using the data obtained from this test, calculate the volume of water vapor $V_{w(std)}$ and the moisture content B_{ws} of the stack gas. Use Equations 5-2 and 5-3 of Method 5.

9.3 Stack Gas Velocity. Using the data from this test and Equation 2-9 of Method 2, calculate the average stack gas velocity v_s.

9.4 Total Mercury. For each source sample, correct the average maximum absorbance of the two consecutive samples whose peak heights agree within ± 3 percent of their average for the contribution of the solution blank (see Section 8.4). Use the calibration curve and these corrected averages, to determine the final total weight of mercury in nanograms in the aeration cell for each source sample. Correct for any dilutions made to bring the sample in the working range of the spectrophotometer. Then calculate the Hg in μg (m_{Hg}) in the original solution as follows:

$$M_{Hg} = \frac{C_{Hg(AC)}(D.F.)V_f 10^{-3}}{S}$$

Eq. 101-1

Where:

$C_{Hg(AC)}$ = Total nanograms of mercury in aliquot analyzed (reagent blank subtracted).

D.F. = Dilution factor for the Hg-containing solution (before adding to the aeration cell; e.g., D.F. = 250/2 if the source samples were diluted as described in Section 7.3.2.)

V_f = Solution volume of original sample, 1000 ml for samples diluted as described in Section 7.2.1.

10^{-3} = Conversion factor, μg/ng.

S = Aliquot volume added to aeration cell, ml.

9.5 *Mercury Emission Rate.* Calculate the Hg emission rate R in g/day for continuous operations using Equation 101-2. For cyclic operations, use only the time per day each stack is in operation. The total Hg emission rate from a source will be the summation of results from all stacks.

$$R = K \frac{m_{Hg} v_s A_s (86{,}400 \times 10^{-6})}{[V_{m(std)} + V_{w(std)}](T_s/P_s)}$$

Eq. 101-2

Where:

A_s = Stack cross-sectional area, m^2 (ft^2).

86,400 = Conversion factor, sec/day.

10^{-6} = Conversion factor, g/μg.

T_s = Absolute average stack gas temperature, °K (°R).

P_s = Absolute stack gas pressure, mm Hg (in. Hg).

K = 0.3858 °K/mm Hg for metric units.
= 17.64 °R/in. Hg for English units.

v_s = Average gas velocity, m/sec (ft/sec).

$V_{m(std)}$ = Dry gas sample volume at standard conditions, scm (scf).

$V_{w(std)}$ = Volume of water vapor at standard conditions, scm (scf).

[9.5 corrected by 53 FR 36972, September 23, 1988]

9.6 *Isokinetic Variation and Acceptable Results.* Same as Method 5, Sections 6.11 and 6.12, respectively.

9.7 *Determination of Compliance.* Each performance test consists of three repetitions of the applicable test method. For the purpose of determining compliance with an applicable national emission standard, use the average of the results of all repetitions.

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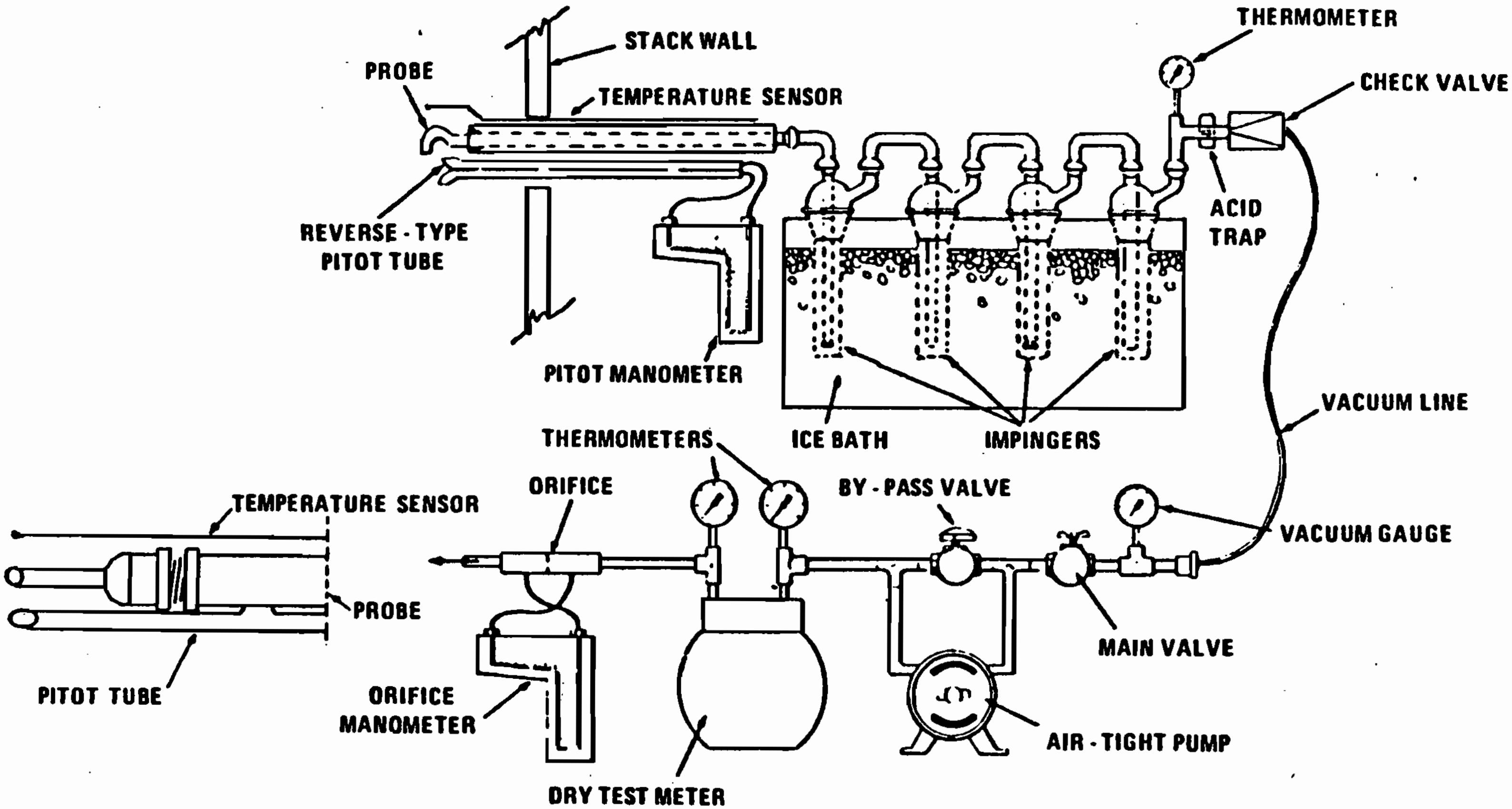
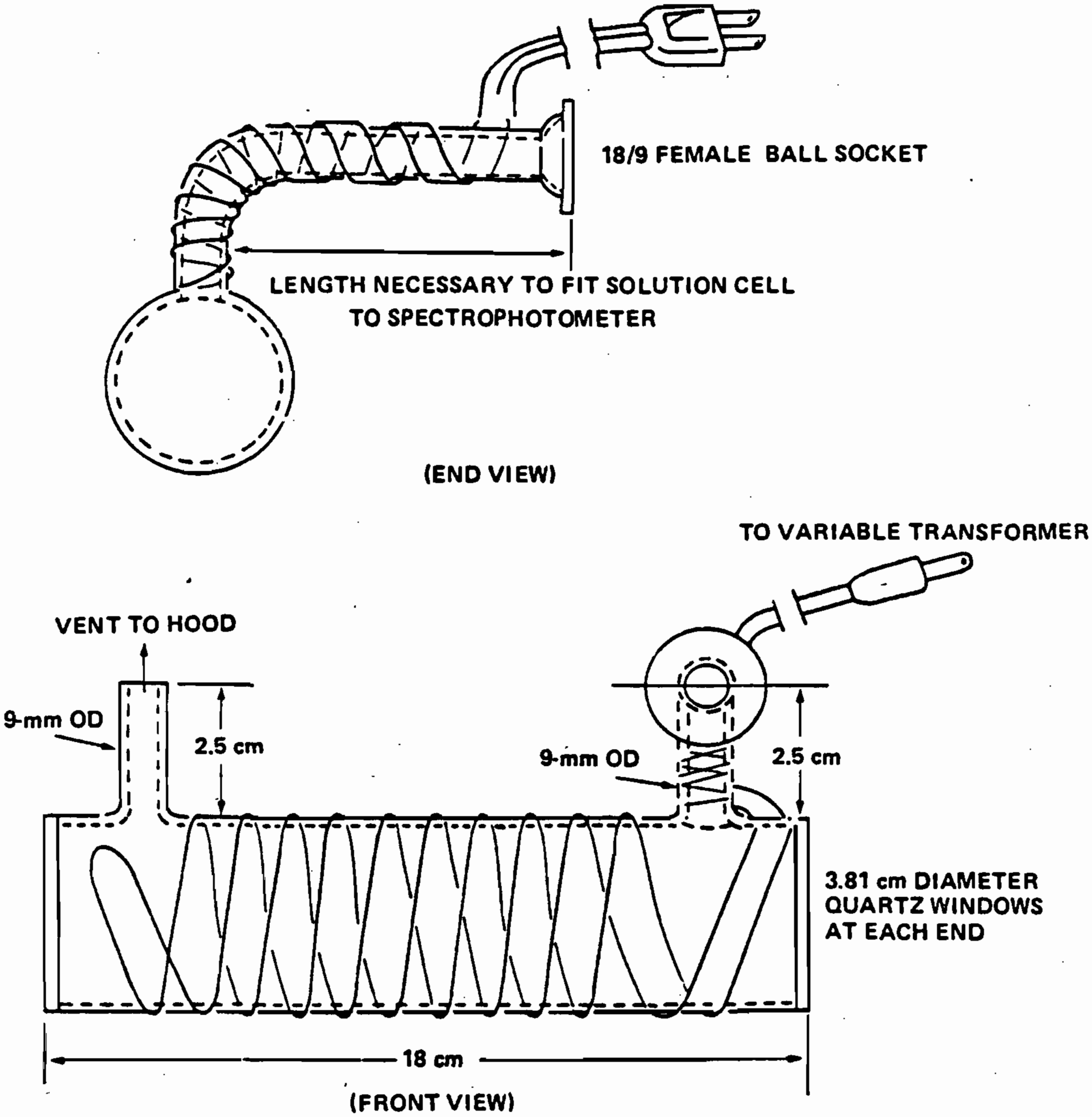


Figure 101-1 Mercury sampling train.



NOTES:
CELL WOUND WITH 24-GAUGE NICHROME WIRE
TOLERANCES ± 5 PERCENT

Figure 101-2. Optical cell.

[Appendix B, Method 101]

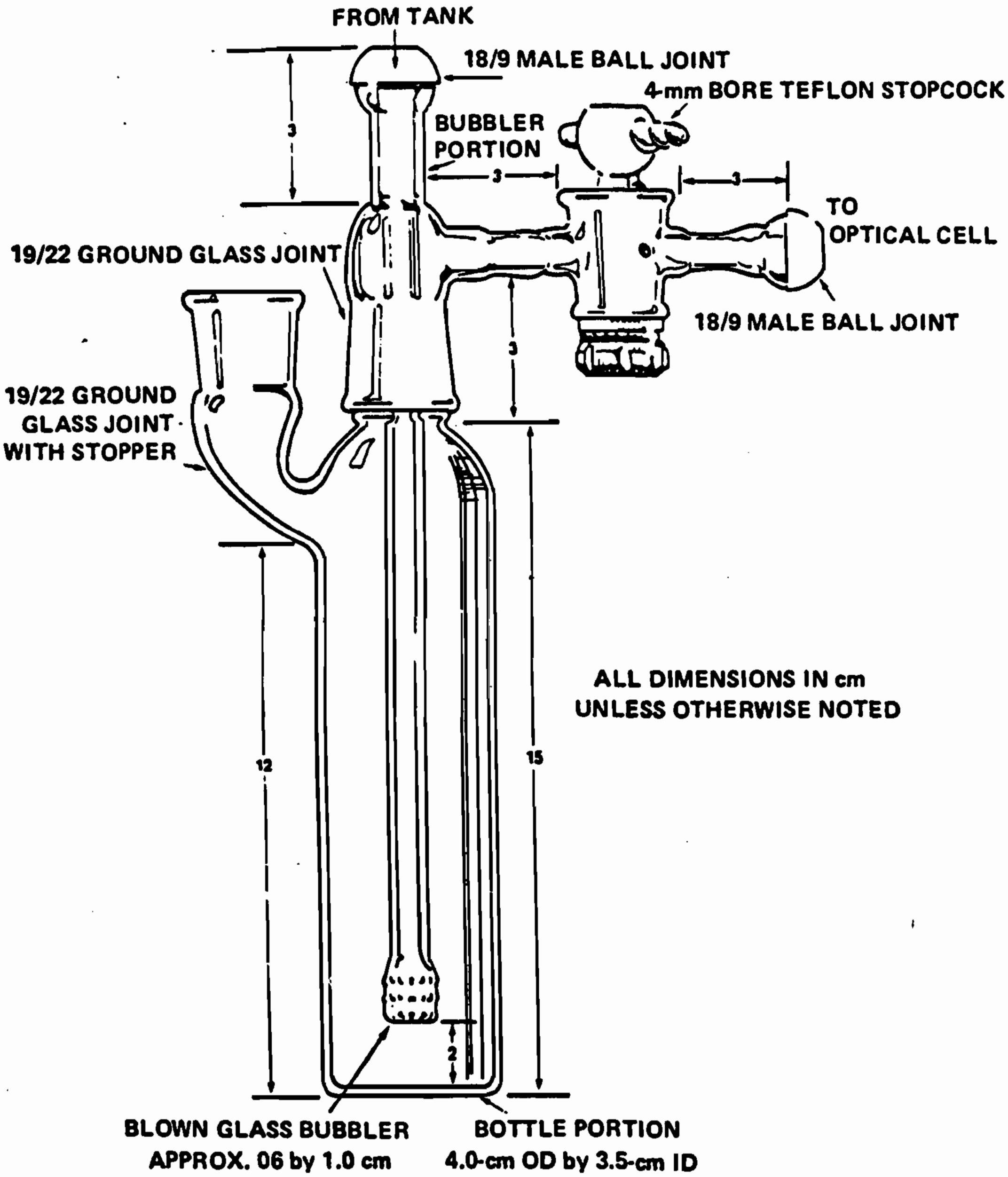


Figure 101-3. Aeration cell.

[Appendix B, Method 101]

PLANT ____________________
LOCATION ____________________
OPERATOR ____________________
DATE ____________________
RUN NO. ____________________
SAMPLE BOX NO. ____________________
FILTER BOX NO. ____________________
METER ΔH@ ____________________
C FACTOR ____________________
PITOT TUBE COEFFICIENT, C_p ____________________

SCHEMATIC OF STACK CROSS SECTION

AMBIENT TEMPERATURE ____________________
BAROMETRIC PRESSURE ____________________
ASSUMED MOISTURE, % ____________________
PROBE LENGTH, m (ft) ____________________
NOZZLE IDENTIFICATION NO. ____________________
AVERAGE CALIBRATED NOZZLE DIAMETER, cm (in.) ____________________
PROBE HEATER SETTING* ____________________
LEAK RATE, m^3/min (cfm) ____________________
PROBE LINER MATERIAL ____________________
STATIC PRESSURE, mm Hg (in. Hg) ____________________
FILTER NO.* ____________________

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	VACUUM mm Hg (in. Hg)	STACK TEMPERATURE (T_S) °C (°F)	VELOCITY HEAD (ΔP_S)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER mm H_2O (in. H_2O)	GAS SAMPLE VOLUME m^3 (ft^3)	GAS SAMPLE TEMPERATURE AT DRY GAS METER		FILTER HOLDER* TEMPERATURE, °C (°F)	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER, °C (°F)
							INLET °C (°F)	OUTLET °C (°F)		
TOTAL							Avg.	Avg.		
AVERAGE							Avg.			

*IF APPLICABLE

Fig. 101-4. Mercury field data.

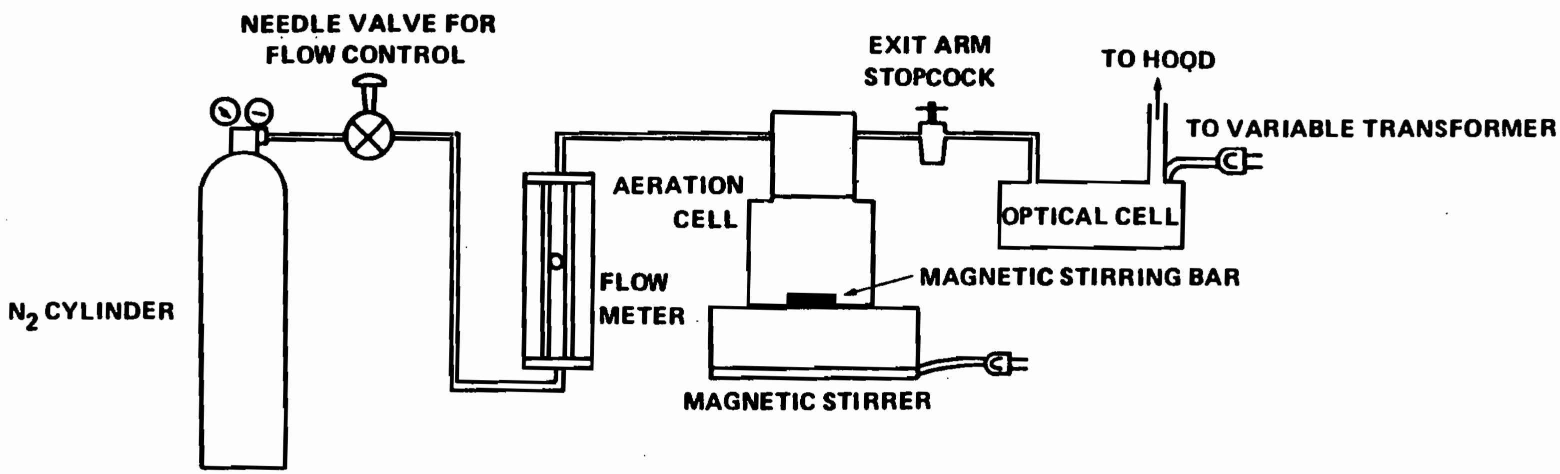


Figure 101-5. Schematic of aeration system.

METHOD 101A—Determination of Particulate and Gaseous Mercury Emissions From Sewage Sludge Incinerators

Introduction

This method is similar to Method 101, except acidic potassium permanganate solution is used instead of acidic iodine monochloride for collection.

1. *Applicability and Principle*

1.1 Applicability. This method applies to the determination of particulate and gaseous mercury (Hg) emissions from sewage sludge incinerators and other sources as specified in the regulations.

1.2 Principle. Particulate and gaseous Hg emissions are withdrawn isokinetically from the source and collected in acidic potassium permanganate ($KMnO_4$) solution. The Hg collected (in the mercuric form) is reduced to elemental Hg, which is then aerated from the solution into an optical cell and measured by atomic absorption spectrophotometry.

2. *Range and Sensitivity*

2.1 Range. After initial dilution, the range of this method is 20 to 800 ng Hg/ml. The upper limit can be extended by further dilution of the sample.

2.2 Sensitivity. The sensitivity of the method depends on the recorder/spectrophotometer combination selected.

3. *Interfering Agents*

3.1 Sampling. Excessive oxidizable organic matter in the stack gas prematurely depletes the $KMnO_4$ solution and thereby prevents further collection of Hg.

3.2 Analysis. Condensation of water vapor on the optical cell windows causes a positive interference.

4. *Precision*

Based on eight paired-train tests, the within-laboratory standard deviation was estimated to be 4.8 μg Hg/ml in the concentration range of 50 to 130 μg Hg/m³.

5. *Apparatus*

5.1 Sampling Train and Sample Recovery. Same as Method 101, Sections 5.1 and 5.2, respectively, except for the following variations:

5.1.1 Probe Liner. Same as Method 101, Section 5.1.2, except that if a filter is used ahead of the impingers, the tester must use the probe heating system to minimize the condensation of gaseous Hg.

5.1.2 Filter Holder (Optional). Borosilicate glass with a rigid stainless-steel wire-screen filter support (do not use glass frit supports) and a silicone rubber or Teflon gasket, designed to provide a positive seal against leakage from outside or around the filter. The filter holder must be equipped with a filter heating system capable of maintaining a temperature around the filter holder of 120 ± 14° C (248 ± 25° F) during sampling to minimize both water and gaseous Hg condensation. The tester may use a filter in cases where the stream contains large quantities of particulate matter.

[5.1.2 corrected by 53 FR 36972, September 23, 1988]

5.2 Analysis. The apparatus needed for analysis is the same as Method 101, Sections 5.3 and 5.4, except as follows:

5.2.1 Volumetric Pipets. Class A; 1-, 2-, 3-, 4-, 5-, 10-, and 20-ml.

5.2.2 Graduated Cylinder. 25-ml.

5.2.3 Steam Bath.

6. *Reagents*

Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

6.1 Sampling and Recovery. The reagents used in sampling and recovery are as follows:

6.1.1 Water. Deionized distilled, meeting ASTM Specifications for Type I Reagent Water—ASTM Test Method D1193-77 (incorporated by reference—see § 61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the $KMnO_4$ test for oxidizable organic matter. Use this water in all dilutions and solution preparations.

6.1.2 Nitric Acid (HNO_3), 50 Percent (V/V). Mix equal volumes of concentrated HNO_3 and deionized distilled water, being careful to slowly add the acid to the water.

6.1.3 Silica Gel. Indicating type, 6- to 16-mesh. If previously used, dry at 175° C (350° F) for 2 hr. The tester may use new silica gel as received.

6.1.4 Filter (Optional). Glass fiber filter, without organic binder, exhibiting at least 99.95 percent efficiency on 0.3 μm dioctyl phthalate smoke particles. The tester may use the filter in cases where the gas stream contains large quantities of particulate matter, but he should analyze blank filters for Hg content.

6.1.5 Sulfuric Acid (H_2SO_4), 10 Percent (V/V). Add and mix 100 ml of concentrated H_2SO_4 with 900 ml of deionized distilled water.

6.1.6 Absorbing Solution, 4 Percent $KMnO_4$ (W/V). Prepare fresh daily. Dissolve 40 g of $KMnO_4$ in sufficient 10 percent H_2SO_4 to make 1 liter. Prepare and store in glass bottles to prevent degradation.

6.2 Analysis. The reagents needed for analysis are listed below:

6.2.1 Tin (II) Solution. Prepare fresh daily and keep sealed when not being used. Competely dissolve 20 g of tin (II) chloride [or 25 g of tin (II) sulfate] crystals (Baker Analyzed reagent grade or any other brand that will give a clear solution) in 25 ml of concentrated HCl. Dilute to 250 ml with deionized distilled water. Do not substitute HNO_3, H_2SO_4, or other strong acids for the HCl.

6.2.2 Sodium Chloride—Hydroxylamine Solution. Dissolve 12 g of sodium chloride and 12 g of hydroxylamine sulfate (or 12 g of hydroxylamine hydrochloride) in deionized distilled water and dilute to 100 ml.

6.2.3 Hydrochloric Acid (HCl), 8 N. Dilute 67 ml of concentrated HNO_3 to 100 ml with deionzed distilled water (slowly add the HCl to the water).

6.2.4 Nitric Acid, 15 Percent (V/V). Dilute 15 ml of concentrated HNO_3 to 100 ml with deionized distilled water.

6.2.5 Mercury Stock Solution, 1 mg Hg/ml. Prepare and store all mercury standard solutions in borosilicate glass containers. Completely dissolve 0.1354 g of mercury (II) chloride in 75 ml of deionized distilled water. Add 100 ml of concentrated HNO_3, and adjust the volume to exactly 100 ml with deionized distilled water. Mix thoroughly. This solution is stable for at least 1 month.

6.2.6 Intermediate Mercury Standard Solution, 10 μg Hg/ml. Prepare fresh weekly. Pipet 5.0 ml of the mercury stock solution (Section 6.2.5) into a 500-ml volumetric flask and add 20 ml of 15 percent HNO_3 solution. Adjust the volume to exactly 500 ml with deionized distilled water. Thoroughly mix the solution.

6.2.7 Working Mercury Standard Solution, 200 ng Hg/ml. Prepare fresh daily. Pipet 5.0 ml from the "Intermediate Mercury Standard Solution" (Section 6.2.6) into a 250-ml volumetric flask. Add 5 ml of 4 percent $KMnO_4$ absorbing solution and 5 ml of 15 percent HNO_3. Adjust the volume to exactly 250 ml with deionized distilled water. Mix thoroughly.

6.2.8 Potassium Permanganate, 5 Percent (W/V). Dissolve 5 g of $KMnO_4$ in deionized distilled water and dilute to 100 ml.

6.2.9 Filter. Whatman No. 40 or equivalent.

7. *Procedure*

7.1 Sampling. The sampling procedure is the same as Method 101, except for changes due to the use of $KMnO_4$ instead of ICl absorbing solution and the possible use of a filter. These changes are as follows:

7.1.1 Preliminary Determinations. The preliminary determinations are the same as those given in Method 101, Section 7.1.2, except for the absorbing solution depletion sign. In this method, high oxidizable organic content may make it impossible to sample for the desired minimum time. This problem is indicated by the complete bleaching of the purple color of the $KMnO_4$ solution. In these cases, the tester may divide the sample run into two or more subruns to insure that the absorbing solution would not be depleted. In cases where an excess of water condensation is encountered, collect two runs to make one sample.

7.1.2 Preparation of Sampling Train. The preparation of the sampling train is the same as that given in Method 101, Section 7.1.3, except for the cleaning of the glassware [probe, filter holder (if used), impingers, and connectors] and the charging of the first three impingers. In this method, clean all the glass components by rinsing with 50 percent HNO_3, tap water, 8 N HCl, tap water, and finally deionized distilled water. Then place 50 ml of 4 percent $KMnO_4$ in the first impinger and 100 ml in each of the second and third impingers.

If a filter is used, use a pair of tweezers to place the filter in the filter holder. Be sure to center the filter and place the gasket in proper position to prevent the sample gas stream from by-passing the filter. Check the filter for tears after assembly is completed. Be sure also to set the filter heating system at the desired operating temperature after the sampling train has been assembled.

7.1.3 Sampling Train Operation. In addition to the procedure given in Method 101, Section 7.1.5, maintain a temperature around the filter (if applicable) of 120°±14° C (248°±25° F).

7.2 Sample Recovery. Begin proper cleanup procedure as soon as the probe is removed from the stack at the end of the sampling period. Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling because the resultant vacuum would draw liquid out from the impingers.

Before moving the sample train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe, impinger assembly, and (if applicable) filter assembly to a cleanup area that is clean, protected from the wind, and free of Hg contamination. The ambient air in laboratories located in the immediate vicinity of Hg-using facilities is not normally free of Hg contamination.

Inspect the train before and during assembly, and note any abnormal conditions. Treat the sample as follows:

7.2.1 Container No. 1 (Impinger, Probe, and Filter Holder). Use a graduated cylinder; measure the liquid in the first three impingers to within ±1 ml. Record the volume of liquid present (e.g., see Figure 5-3 of Method 5 in Part 60 of 40 CFR). This information is needed to calculate the moisture content of the effluent gas. (Use only graduated cylinder and glass storage bottles that have been precleaned as in Section 7.1.2.) Place the contents of the first three impingers into a 1000-ml glass sample bottle.

(NOTE: If a filter is used, remove the filter from its holder, as outlined under "Container No. 3" below.)

Taking care that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover the Hg (and any condensate) from the probe nozzle, probe fitting, probe liner and front half of the filter holder (if applicable) as follows: Rinse these components with a total of 250 to 400 ml of fresh 4 percent $KMnO_4$ solution; add all washings to the 1000-ml glass sample bottle; remove any residual brown deposits on the glassware using the minimum amount of 8 N HCl required; and add this HCl rinse to this sample container.

After all washings have been collected in the sample container, tighten the lid on the container to prevent leakage during shipment to the laboratory. Mark the height of the fluid level to determine whether leakage occurs during transport. Label the container to clearly identify its contents.

7.2.2. Container No. 2 (Silica Gel). Note the color of the indicating silica gel to determine whether it has been completely spent and make a notation of its condition. Transfer the silica gel from its impinger to its original container and seal. The tester may use as aids a funnel to pour the silica gel and a rubber policeman to remove the silica gel from the impinger. It is not necessary to remove the small amount of particles that may adhere to the impinger wall and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

7.2.3 Container No. 3 (Filter). If a filter was used, carefully remove it from the filter holder, place it in a 100-ml glass sample bottle, and add 20 to 40 ml of 4 percent $KMnO_4$. If it is necessary to fold the filter, be sure that the particulate cake is inside the fold. Carefully transfer to the 150-ml sample bottle any particulate matter and filter fibers that adhere to the filter holder gasket by using a dry Nylon bristle brush and a sharp-edged blade. Seal the container. Label the container to clearly identify its contents. Mark the height of the fluid level to determine whether leakage occurs during transport.

7.2.4 Container No. 4 (Filter Blank). If a filter was used, treat an unused filter from the same filter lot used for sampling in the same manner as Container No. 3.

7.2.5 Container No. 5 (Absorbing Solution Blank). For a blank, place 500 ml of 4 percent $KMnO_4$ absorbing solution in a 1000-ml sample bottle. Seal the container.

7.3 Sample preparation. Check liquid level in each container to see if liquid was lost during transport. If a noticeable amount of leakage occurred, either void the sample or use methods subject to the approval of the Administrator to account for the losses. Then follow the procedures below.

7.3.1 Containers No. 3 and No. 4 (Filter and Filter Blank). If a filter was used, place the contents, including the filter, of Containers No. 3 and No. 4 in separate 250-ml beakers and heat the beakers on a steam bath until most of the liquid has evaporated. Do not take to dryness. Add 20 ml of concentrated HNO_3 to the beakers, cover them with a glass, and heat on a hot plate at 70° C for 2 hours. Remove from the hot plate and filter the solution through Whatman No. 40 filter paper. Save the filtrate for Hg analysis. Discard the filter.

7.3.2 Container No. 1 (Impingers, Probe, and Filter Holder). Filter the contents of Container No. 1 through Whatman 40 filter paper to remove the brown MnO_2 precipitate. Wash the filter with 50 ml of 4 percent $KMnO_4$ absorbing solution and add this wash to the filtrate. Discard the filter. Combine the filtrates from Containers No. 1 and No. 3 (if applicable), and dilute to a known volume with deionized distilled water. Mix thoroughly.

7.3.3 Container No. 5 (Absorbing Solution Blank). Treat this container as described in Section 7.3.2. Combine this filtrate with the filtrate with Container No. 4 and dilute to a known volume with deionized distilled water. Mix thoroughly.

7.4 Analysis. Calibrate the spectrophotometer and recorder and prepare the calibration curve as described in Sections 8.1 to 8.2. Then repeat the procedure used to establish the calibration curve with appropriately sized aliquots (1 to 10 ml) of the samples (from Sections 7.3.2 and 7.3.3) until two consecutive peak heights agree within ±3 percent of their average value. If the 10-ml sample is below the detectable limit, use a larger aliquot (up to 20 ml), but decrease the volume of water added to the aeration cell accordingly to prevent the solution volume from exceeding the capacity of the aeration bottle. If the peak maximum of a 1.0-ml aliquot is off scale, further dilute the original sample to bring the Hg concentration into the calibration range of the spectrophotometer. If the Hg content of the absorbing solution and filter blank is below the working range of the analytical method, use zero for the blank.

Run a blank and standard at least after every five samples to check the spectrophotometer calibration; recalibrate as necessary.

It is also recommended that at least one sample from each stack test be checked by the Method of Standard Additions to confirm that matrix effects have not interfered in the analysis.

[7.4 corrected by 53 FR 36972, September 23, 1988]

8. *Calibration and Standards*

The calibration and standards are the same as Method 101, Section 8, except for the following variations:

8.1 Optical Cell Heating System Calibration. Same as Method 101, Section 8.2, except use a 25-ml graduated cylinder to add 25 ml of deionized distilled water to the bottle section of the aeration cell.

8.2 Spectrophotometer and Recorder Calibration. The mercury response may be measured by either peak height or peak area. (NOTE: The temperature of the solution affects the rate at which elemental Hg is released from a solution and, consequently, it affects the shape of the absorption curve (area) and the point of maximum absorbance (peak height). To obtain reproducible results, all solutions must be brought to room temperature before use.) Set the spectrophotometer wave length at 253.7 nm and make certain the optical cell is at the minimum temperature that will prevent water condensation.

Then set the recorder scale as follows: Using a 25-ml graduated cylinder, add 25 ml of deionized distilled water to the aeration cell bottle and pipet 5.0 ml of the working mercury standard solution into the aeration cell. (NOTE: Always add the Hg-containing solution to the aeration cell after the 25 ml of deionized distilled water.) Place a Teflon-coated stirring bar in the bottle. Add 5 ml of the 4 percent $KMnO_4$ absorbing solution followed by 5 ml of 15 percent HNO_3 and 5 ml of 5 percent $KMnO_4$ to the aeration bottle and mix well. Now, attach the bottle section to the bubbler section of the aeration cell and make certain that (1) the aeration cell exit arm stopcock (Figure 101-3 of Method 101) is closed (so that Hg will not prematurely enter the optical cell when the reducing agent is being added) and (2) there is no flow through the bubbler. Add 5 ml of sodium chloride hydroxylamine in 1-ml increments until the solution is colorless. Now add 5 ml of tin (II) solution to the aeration bottle through the side arm, and immediately stopper the side arm. Stir the solution for 15 seconds, turn on the recorder, open the aeration cell exit arm stopcock, and immediately initiate aeration with continued stirring. Determine the maximum absorbance of the standard and set this value to read 90 percent of the recorder full scale.

[8.2 amended by 49 FR 35769, September 12, 1984]

9. *Calculations*—9.1 *Dry Gas Volume, Volume of Water Vapor and Moisture Content, Stack Gas Velocity, Isokinetic Variation and Acceptable Results, and Determination of Compliance*. Same as Method 101. Sections 9.1, 9.2, 9.3, 9.6, and 9.7, respectively, except use data obtained from this test.

9.2 *Total Mercury*. For each source sample, correct the average maximum absorbance of the two consecutive samples whose peak heights agreed within ±3 percent of their average for the contribution of the field blank. Then calculate the total Hg content in μg in each sample. Correct for any dilutions made to bring the sample into the working range of the spectrophotometer.

9.3 *Mercury Emission Rate*. Calculate the Hg emission rate R in g/day for continuous operations using Equation 101A-1. For cyclic operations, use only the time per day each stack is in operation. The total Hg emission rate from a source will be the summation of results from all stacks.

$$R = K \frac{m_{Hg} v_s A_s (86{,}400 \times 10^{-6})}{(V_{m(std)} + V_{w(std)})(T_s/P_s)}$$

Eq. 101A-1

Where:

m_{Hg} = Total Hg content in each sample, μg.
v_s = Average stack gas velocity, m/sec (fps).
A_s = Stack cross-sectional area, m^2 (ft^2).
86,400 = Conversion factor, sec/day.
10^{-6} = Conversion factor, g/μg.
$V_{m(std)}$ = Dry gas sample volume at standard conditions, corrected for leakage (if any), m^3 (ft^3).
$V_{w(std)}$ = Volume of water vapor at standard conditions, m^3 (ft^3).
T_s = Absolute average stack gas temperature, °K (°R).
P_s = Absolute stack gas pressure, mm Hg (in. Hg).
K = 0.3858 °K/mm Hg for metric units.
= 17.64 °R/in. Hg for English units.

10. *Bibliography*.

1. Same as Method 101, Section 10.
2. Mitchell, W. J., M. R. Midgett, J. C. Suggs, and D. Albrinck.
Test Methods to Determine the Mercury Emissions from Sludge Incineration Plants. U.S. Environmental Protection Agency. Research Triangle Park, North Carolina. Publication No. EPA-600/4-79-058. September 1979.

EPA METHOD 103

Beryllium Screening Method

EPA METHOD 104

Determination of Beryllium Emissions from Stationary Sources

METHOD 103. BERYLLIUM SCREENING METHOD

[Method 103 revised by 48 FR 55266, December 9, 1983]

1. *Applicability and Principle.*

1.1 Applicability. This procedure details guidelines and requirements for methods acceptable for use in determining beryllium (Be) emissions in ducts or stacks at stationary sources.

[1.1 amended by 50 FR 46290, November 7, 1985]

1.2 Principle. Be emissions are isokinetically sampled from three points in a duct or stack. The collected sample is analyzed for Be using an appropriate technique.

2. *Apparatus.*

2.1 Sampling Train. A schematic of the required sampling train configuration is shown in Figure 103-1. The essential components of the train are the following:

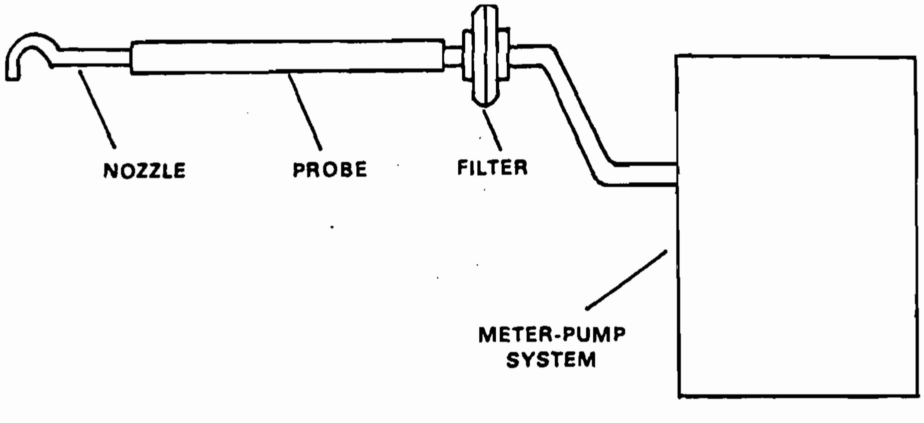


Figure 103-1. Beryllium screening method; sample train schematic.

2.1.1 Nozzle. Stainless steel, or equivalent, with sharp, tapered leading edge.

2.1.2 Probe. Sheathed borosilicate or quartz glass tubing.

2.1.3 Filter. Millipore AA (*Note:* Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency), or equivalent, with appropriate filter holder that provides a positive seal against leakage from outside or around the filter. It is suggested that a Whatman 41, or equivalent, be placed immediately against the back side of the Millipore filter as a guard against breakage of the Millipore. Include the backup filter in the analysis. To be equivalent, other filters shall exhibit at least 99.95 percent efficiency (0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles, and be amenable to the Be analysis procedure. The filter efficiency tests shall be conducted in accordance with American Society for Testing and Materials (ASTM) Standard Method D 2986-71 (reapproved 1978) (incorporated by reference—see § 61.18). Test data from the supplier's quality control program are sufficient for this purpose.

2.1.4 Meter-Pump System. Any system that will maintain isokinetic sampling rate, determine sample volume, and is capable of a sampling rate of greater than 14 1 pm (0.5 cfm).

2.2 Measurement of Stack Conditions. The following equipment is used to measure stack conditions:

2.2.1 Pitot Tube. Type S, or equivalent, with a coefficient within 5 percent over the working range.

2.2.2 Inclined Manometer, or Equivalent. To measure velocity head to within 10 percent of the minimum value.

2.2.3 Temperature Measuring Device. To measure stack temperature to within 1.5 percent of the minimum absolute stack temperature.

2.2.4 Pressure Measuring Device. To measure stack pressure to within 2.5 mm Hg (0.1 in. Hg).

2.2.5 Barometer. To measure atmospheric pressure to within 2.5 mm Hg (0.1 in. Hg).

2.2.6 Wet and Dry Bulb Thermometers, Drying Tubes, Condensers, or Equivalent. To determine stack gas moisture content to within 1 percent.

2.3 Sample Recovery.

2.3.1 Probe Cleaning Equipment. Probe brush or cleaning rod at least as long as probe, or equivalent. Clean cotton balls, or equivalent, should be used with the rod.

2.3.2 Leakless Glass Sample Bottles. To contain sample.

2.4 Analysis. Use equipment necessary to perform an atomic absorption, spectrographic, fluorometric, chromatographic, or equivalent analysis.

3. *Reagents.*

3.1 Sample Recovery.

3.1.1 Water. Distilled water.

3.1.2 Acetone. Reagent grade.

3.1.3 Wash Acid, 50 Percent (V/V) Hydrochloric Acid (HCl).

Mix equal volumes of concentrated HCl and water, being careful to add the acid slowly to the water.

3.2 Analysis. Reagents as necessary for the selected analytical procedure.

4. *Procedure.* Guidelines for source testing are detailed in the following sections. These guidelines are generally applicable; however, most sample sites differ to some degree and temporary alterations such as stack extensions or expansions often are required to insure the best possible sample site. Further, since Be is hazardous, care should be taken to minimize exposure. Finally, since the total quantity of Be to be collected is quite small, the test must be carefully conducted to prevent contamination or loss of sample.

4.1 Selection of a Sampling Site and Number of Sample Runs. Select a suitable sample site that is as close as practicable to the point of atmospheric emission. If possible, stacks smaller than 1 foot in diameter should not be sampled.

4.1.1 Ideal Sampling Site. The ideal sampling site is at least eight stack or duct diameters downstream and two diameters upstream from any flow disturbance such as a bend, expansion or contraction. For rectangular cross sections, use Equation 103-1 to determine an equivalent diameter, D_e.

Eq. 103-1

$$D_e = \frac{2LW}{L+W}$$

Where:
L=length
W=width

4.1.2 Alternate Sampling Site. Some sampling situations may render the above sampling site criteria impractical. In such cases, select an alternate site no less than two diameters downstream and one-half diameter upstream from any point of flow disturbance. Additional sample runs are recommended at any sample site not meeting the criteria of Section 4.1.1.

4.1.3 Number of Sample Runs Per Test. Three sample runs constitute a test. Conduct each run at one of three different points. Select three points that proportionately divide the diameter, or are located at 25, 50, and 75 percent of the diameter from the inside wall. For horizontal ducts, sample on a vertical line through the centroid. For rectangular ducts, sample on a line through the centroid and parallel to a side. If additional sample runs are performed per Section 4.1.2, proportionately divide the duct to accommodate the total number of runs.

4.2 Measurement of Stack Conditions. Using the equipment described in Section 2.2, measure the stack gas pressure, moisture, and temperature to determine the molecular weight of the stack gas. Sound engineering estimates may be made in lieu of direct measurements. Describe the basis for such estimates in the test report.

4.3 Preparation of Sampling Train. Assemble the sampling train as shown in Figure 103-1. It is recommended that all glassware be precleaned by soaking in wash acid for 2 hours.

Leak check the sampling train at the sampling site. The leakage rate should not be in excess of 1 percent of the desired sample rate.

4.4 Beryllium Train Operation. For each run, measure the velocity at the selected sampling point. Determine the isokinetic sampling rate. Record the velocity head and the required sampling rate. Place the nozzle at the sampling point with the tip pointing directly into the gas stream. Immediately start the pump and adjust the flow to isokinetic conditions. At the conclusion of the test, record the sampling rate. Again measure the velocity head at the sampling point. The required isokinetic rate at the end of the period should not have deviated more than 20 percent from that originally calculated. Describe the reason for any deviation beyond 20 percent in the test report.

Sample at a minimum rate of 14 lpm (0.5 cfm). Obtain samples over such a period or periods of time as are necessary to determine the maximum emissions which would occur in a 24-hour period. In the case of cyclic operations, perform sufficient sample runs so as to allow determination or calculation of the emissions that occur over the duration of the cycle. A minimum sampling time of 2 hours per run is recommended.

4.5 Sample Recovery. It is recommended that all glassware be precleaned as in Section 4.3. Sample recovery should also be performed in an area free of possible Be contamination. When the sampling train is moved, exercise care to prevent breakage and contamination. Set aside a portion of the acetone used in the sample recovery as a blank for analysis. The total amount of acetone used should be measured for accurate blank correction. Blanks can be eliminated if prior analysis shows negligible amounts.

Remove the filter (and backup filter, if used) and any loose particulate matter from filter holder, and place in a container.

Clean the probe with acetone and a brush or long rod and cotton balls. Wash into the container with the filter. Wash out the filter holder with acetone, and add to the same container.

4.6 Analysis. Make the necessary preparation of samples and analyze for Be. Any currently acceptable method such as atomic absorption, spectrographic, fluorometric, chromatographic, or equivalent may be used.

5. *Calibration and Standards.*

5.1 Sampling Train. As a procedural check, compare the sampling rate regulation with a dry gas meter, spirometer, rotameter (calibrated for prevailing atmospheric conditions), or equivalent, attached to the nozzle inlet of the complete sampling train.

5.2 Analysis. Perform the analysis standardization as suggested by the manufacturer of the instrument, or the procedures for the analytical method in use.

6. *Calculations.*

Calculate the Be emission rate R in g/day for each stack using Equation 103-2. For cyclic operations, use only the time per day each stack is in operation. The total Be emission rate from a source is the summation of results from all stacks.

Eq. 103-2

$$R = \frac{W_t v_s(avg)\ A_s\ (86{,}400 \times 10^{-6})}{V_{total}}$$

Where:

W_t = Total weight of Be collected, μg.

$v_s(avg)$ = Average stack gas velocity, m/sec (ft/sec).

$A_s(avg)$ = Stack area, m^2 (ft^2).

86,400 = Conversion factor, sec/day.

10^{-6} = Conversion factor, g/μg.

V_{total} = Total volume of gas sampled, m^3 (ft^3).

7. *Test Report.*

Prepare a test report that includes as a minimum: A detailed description of the sampling train used, results of the procedural check described in Section 5.1 with all data and calculations made, all pertinent data taken during the test, the basis for any estimates made, isokinetic sampling calculations, and emission results. Include a description of the test site, with a block diagram and brief description of the process, location of the sample points in the stack cross section, and stack dimensions and distances from any point of disturbance.

Method 104—Determination of Beryllium Emissions From Stationary Sources

[Title corrected by 53 FR 36972, September 23, 1988]

1. *Applicability and Principle.*

1.1 Applicability. This method is applicable for the determination of beryllium (Be) emissions in ducts or stacks at stationary sources. Unless otherwise specified, this method is not intended to apply to gas streams other than those emitted directly to the atmosphere without further processing.

1.2 Principle. Be emissions are isokinetically sampled from the source, and the collected sample is digested in an acid solution and analyzed by atomic absorption spectrophotometry.

2. *Apparatus.*

2.1 Sampling Train. The sampling train is identical to the Method 5 train as shown in Figure 5-1 (mention of Method 5 refers to 40 CFR Part 60). The sampling train consists of the following components:

2.1.1 Probe Nozzle, Pitot Tube, Differential Pressure Gauge, Metering System, Barometer, and Gas Density Determination Equipment. Same as Method 5, Sections 2.1.1, 2.1.3, 2.1.4, 2.1.8, 2.1.9, and 2.1.10, respectively.

2.1.2 Probe Liner. Borosilicate or quartz glass tubing. The tester may use a heating system capable of maintaining a gas temperature of 120±14°C (248±25°F) at the probe exit during sampling to prevent water condensation. *Note:* Do not use metal probe liners.

2.1.3 Filter Holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. Other materials of construction (e.g., stainless steel, Teflon, Viton) may be used, subject to the approval of the Administrator. (*Note*: Mention of trade names of specific products does not constitute endorsement by the Environmental Protection Agency.) The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe. A heating system capable of maintaining the filter at a minimum temperature in the range of the stack temperature may be used to prevent condensation from occurring.

2.1.4 Impingers. Four Greenburg-Smith impingers connnected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. For the first, third, and fourth impingers, the tester may use impingers that are modified by replacing the tip with a 13-mm-ID (0.5-in.) glass tube extending to 13 mm (0.5 in.) from the bottom of the flask.

2.2 Sample Recovery. The following items are needed:

2.2.1 Probe Cleaning Rod. At least as long as probe.

2.2.2 Glass Sample Bottles. Leakless, with Teflon-lined caps, 500-ml.

2.2.3 Graduated Cylinder, 250-ml.

2.2.4 Funnel and Rubber Policeman. To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

2.2.5 Funnel. Glass, to aid in sample recovery.

2.2.6 Plastic Jar. Approximately 300-ml.

2.3 Analysis. The following equipment is needed:

2.3.1 Atomic Absorption Spectrophotometer. Perkin-Elmer 303, or equivalent, with nitrous oxide/acetylene burner.

2.3.2 Hot Plate.

2.3.3 Perchloric Acid Fume Hood.

3. *Reagents.*

Use ACS reagent-grade chemicals or equivalent, unless otherwise specified.

3.1 Sampling and Recovery. The reagents used in sampling and recovery are as follows:

3.1.1 Filter. Millipore AA, or equivalent. It is suggested that a Whatman 41 filter or equivalent be placed immediately against the back side of the Millipore filter as a guard against breaking the Millipore filter. To be equivalent, other filters shall exhibit at least 99.95 percent efficiency (0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency tests shall be conducted in accordance with ASTM Standard Method D 2986-71 (reapproved 1978) (incorporated by reference—see § 61.18). Test data from the supplier's quality control program are sufficient for this purpose.

3.1.2 Water. Deionized distilled, meeting ASTM Specifications for Type 3 Reagent Water—ASTM Test Method D 1193-77 (incorporated by reference—see § 61.18). If high concentrations of organic matter are not expected to be present, the analyst may eliminate the $KMnO_4$ test for oxidizable organic matter.

3.1.3 Silica Gel. Indicating type, 6- to 16-mesh. If previously used, dry at 175°C (350°F) for 2 hours. The tester may use new silica gel as received.

3.1.4 Acetone.

3.1.5 Wash Acid, 50 Percent (V/V) Hydrochloric Acid (HCl).

Mix equal volumes of concentrated HCl and water, being careful to add the acid slowly to the water.

3.2 Sample Preparation and Analysis. The reagents needed are listed below:

3.2.1 Water. Same as Section 3.1.2.

3.2.2. Perchloric Acid ($HClO_4$). Concentrated (70 percent).

3.2.3 Nitric Acid (HNO_3). Concentrated.

3.2.4 Beryllium Powder. Minimum purity 98 percent.

3.2.5 Sulfuric Acid (H_2SO_4) Solution, 12 N. Dilute 33 ml of concentrated H_2SO_4 to 1 liter with water.

3.2.6 Hydrochloric Acid Solution, 25 percent HCl (V/V).

3.2.7 Standard Beryllium Solution, 1 μg Be/ml. Dissolve 10 mg of Be in 80 ml of 12 N H_2SO_4 solution, and dilute to 1000 ml with water. Dilute a 10-ml aliquot to 100 ml with 25 percent HCl solution to give a concentration of 1 μg/ml. Prepare this dilute stock solution fresh daily. Equivalent strength Be stock solutions may be prepared from Be salts such as $BeCl_2$ and $Be(NO_3)_2$ (98 percent minimum purity).

4. *Procedure*

4.1 Sampling. Because of the complexity of this method testers should be trained and experienced with the test procedures to assure reliable results. As Be is hazardous, testers should take precautions to minimize exposure. The amount of Be that is collected is generally small, therefore, it is necessary to exercise particular care to prevent contamination or loss of sample.

4.1.1 Pretest Preparation. Follow the general procedure given in Method 5, Section 4.1.1. Omit the directions of filters, except check them visually against light for irregularities and flaws such as pinholes.

4.1.2 Preliminary Determinations. Follow the general procedure given in Method 5, Section 4.1.2, except as follows: Select a nozzle size based on the range of velocity heads to assure that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates below 28 liters/min (1.0 cfm).

Obtain samples over a period or periods of time that accurately determine the maximum emissions that occur in a 24-hour period. In the case of cyclic operations, perform sufficient sample runs for the accurate determination of the emissions that occur over the duration of the cycle. A minimum sample time of 2 hours per run is recommended.

4.1.3 Prior to assembly, clean all glassware (probe, impingers, and connectors) by first soaking in wash acid for 2 hours, followed by rinsing with water. Place 100 ml of water in each of the first two impingers, and leave the third impinger empty. Save a portion of the water for a blank analysis. Place approximately 200 g of preweighed silica gel in the fourth impinger. The tester may use more silica gel, but should be careful to ensure that it is not entrained and carried out from the impinger during sampling. Place the silica gel container in a clean place for later use in the sample recovery. As an alternative, determine and record the weight of the silica gel plus impinger to the nearest 0.5 g.

Install the selected nozzle using a Viton A O-ring when stack temperatures are less the 260°C (500°F). Use a fiberglass string gasket if temperatures are higher. See APTD-0576 (Citation 9 in Section 10 of Method 101) for details. Other connecting systems using either 316 stainless steel or Teflon ferrules may be used.

If condensation in the probe or filter is a problem, probe and filter heaters will be required. Adjust the heaters to provide a temperature at or above the stack temperature. However, membrane filters such as the Millipore AA are limited to about 225°F. If the stack gas is in excess of about 200°F, consideration should be given to an alternate procedure such as moving the filter holder downstream of the first impinger to insure that the filter does not exceed its temperature limit. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point. Assemble the train as shown in Figure 5-1 of Method 5, using (if necessary) a very light coat of silicone grease on all ground glass joints. Grease only the outer portion (see APTD-0576) to avoid possibility of contamination by the silicone grease. *Note:* An empty impinger may be inserted between the third impinger and the silica gel to remove excess moisture from the sample stream.

After the sampling train has been assembled, turn on and set the probe, if applicable, at the desired operating temperature. Allow time for the temperatures to stabilize. Place crushed ice around the impingers.

4.1.4. Leak-Check Procedures. Follow the leak-check procedures outlined in Method 5, Sections 4.1.4.1 (Pretest Leak Check), 4.1.4.2 (Leak Checks During Sample Run), and 4.1.4.3 (Post-Test Leak Check).

4.1.5 Beryllium Train Operation. Follow the general procedure given in Method 5, Section 4.1.5. For each run, record the data required on a data sheet such as the one shown in Figure 5-2 of Method 5.

4.1.6 Calculation of Percent Isokinetic. Same as Method 5, Section 4.1.6.

4.2 Sample Recovery. Begin proper cleanup procedure as soon as the probe is removed from the stack at the end of the sampling period.

Allow the probe to cool. When it can be safely handled, wipe off any external particulate matter near the tip of the probe nozzle, and place a cap over it. Do not cap off the probe tip tightly while the sampling train is cooling. Capping would create a vacuum and draw liquid out from the impingers.

Before moving the sampling train to the cleanup site, remove the probe from the train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the impinger. Use either ground-glass stoppers, plastic caps, or serum caps to close these openings.

Transfer the probe and impinger assembly to a cleanup area that is clean, protected from the wind, and free of Be contamination.

Inspect the train before and during this assembly, and note any abnormal conditions. Treat the sample as follows:

Disconnect the probe from the impinger train. Remove the filter and any loose particulate matter from the filter holder, and place in a sample bottle. Place the contents (measured to ±1 ml) of the first three impingers into another sample bottle. Rinse the probe and all glassware between it and the back half of the third impinger with water and acetone, and add this to the latter sample bottle. Clean the probe with a brush or a long slender rod and cotton balls. Use acetone while cleaning. Add these to the sample bottle. Retain a sample of the water and acetone as a blank. The total amount of water and acetone used should be measured for accurate blank correction. Place the silica gel in the plastic jar. Seal and secure all sample containers for shipment. If an additional test is desired, the glassware can be carefully double rinsed with water and reassembled. However, if the glassware is out of use more than 2 days, repeat the initial acid wash procedure.

4.3 Analysis.

4.3.1 Apparatus Preparation. Before use, clean all glassware according to the procedure of Section 4.1.3. Adjust the instrument settings according to the instrument manual, using an absorption wavelength of 234.8 nm.

4.3.2 Sample Preparation. The digestion of Be samples is accomplished in part in concentrated $HClO_4$. *Caution:* The analyst must insure that the sample is heated to light brown fumes after the initial HNO_3 addition; otherwise, dangerous perchlorates may result from the subsequent $HClO_4$ digestion. $HClO_4$ should be used only under a hood.

4.3.2.1 Filter Preparation. Transfer the filter and any loose particulate matter from the sample container to a 150-ml beaker. Add 35 ml concentrated HNO_3. Heat on a hotplate until light brown fumes are evident to destroy all organic matter. Cool to room temperature, and add 5 ml concentrated H_2SO_4 and 5 ml concentrated $HClO_4$. Then proceed with step 4.3.2.4.

4.3.2.2 Water Preparation. Place a portion of the water and acetone sample into a 150-ml beaker, and put on a hotplate. Add portions of the remainder as evaporation proceeds and evaporate to dryness. Cool the residue, and add 35 ml concentrated HNO_3. Heat on a hotplate until light brown fumes are evident to destroy any organic matter. Cool to room temperature, and add 5 ml concentrated H_2SO_4 and 5 ml concentrated $HClO_4$. Then proceed with step 4.3.2.4.

4.3.2.3 Silica Gel Preparation Analyses. Weigh the spent silica gel, and report to the nearest gram.

4.3.2.4 Final Sample Preparation. Samples from 4.3.2.1 and 4.3.2.2 may be combined here for ease of analysis. Replace on a hotplate, and evaporate to dryness in a $HClO_4$ hood. Cool and dissolve the residue in 10.0 ml of 25 percent V/V HCl. Samples are now ready for the atomic absorption unit. It is necessary for the Be concentration of the sample to be within the calibration range of the unit. If necessary, perform further dilution of sample with 25 percent V/V HCl to bring the sample within the calibration range.

4.3.3 Beryllium Determination. Analyze the samples prepared in 4.3.2 at 234.8 nm using a nitrous oxide/acetylene flame. Aluminum, silicon and other elements can interfere with this method if present in large quantities. Standard methods are available, however, that may be used to effectively eliminate these interferences (see Citation 2 in Section 8).

5. *Calibration*

5.1 Sampling Train. Calibrate the sampling train components according to the procedures outlined in the following sections of Method 5: Section 5.1 (Probe Nozzle), Section 5.2 (Pitot Tube), Section 5.3 (Metering System), Section 5.4 (Probe Heater), Section 5.5 (Temperature Gauges), Section 5.7 (Barometer). Note that the leak check described in Section 5.6 of Method 5 applies to this method.

6. *Calculations*

6.1 Dry Gas Volume. Using the data from each sample run, calculate the dry gas sample volume at standard conditions $V_{m(std)}$ (corrected for leakage, if necessary) as outlined in Section 6.3 of Method 5.

6.2 Volume of Water Vapor in Sample and Moisture Content of Stack Gas. Using the data obtained from each sample run, calculate the volume of water vapor $V_{w(std)}$ in the sample, and the moisture content B_{ws} of the stack gas. Use Equations 5-2 and 5-3 of Method 5.

6.3 Stack Gas Velocity. Using the data from each sample run and Equation 2-9 of Method 2, calculate the average stack gas velocity $v_{s(avg)}$.

6.4 Beryllium Emission Rate. Calculate the Be emission rate R in g/day for each stack using Equation 104-1. For cyclic operations, use only the time per day each stack is in operation. The total Be emission rate from a source will be the summation of results from all stacks.

$$R=K\frac{W_t v_{s(avg)} A_s(86{,}400\times 10^{-6})}{(V_{m(std)}+V_{w(std)})(T_s/P_s)}$$

Eq. 104-1

Where:

W_t=Total weight of Be collected, μg.
A_s=Stack cross-sectional area, M^2 (ft^2).
86,400=Conversion factor, sec/day.
10^{-6}=Conversion factor, g/μg.
T_s=Absolute average stack gas temperature, °K (°R).
P_s=Absolute stack gas pressure, mm Hg (in. Hg).
K=0.3858 °K/mm Hg for metric units.
=17.64 °R/in. Hg for English units.

6.5 Isokinetic Variation and Acceptable Results. Same as Method 5, Sections 6.11 and 6.12, respectively.

7. *Determination of Compliance*

Each performance test consists of three sample runs of the applicable test method. For the purpose of determining compliance with an applicable national emission standard, use the average of the results of all sample runs.

8. *Bibliography*

In addition to Citations 1-3 and 5-15 of Section 10 of Method 101, the following citations may be helpful:

1. Amos, M.D., and J. B. Willis. Use of High-Temperature Pre-Mixed Flames in Atomic Absorption Spectroscopy. Spectrochim. Acta. *22*:1325. 1966.

2. Fleet, B., K. V. Liberty, and T. S. West. A Study of Some Matrix Effects in the Determination of Beryllium by Atomic Absorption Spectroscopy in the Nitrous Oxide-Acetylene Flame. Talanta *17*:203. 1970.

[Appendix B, Method 105]

EPA METHOD 108

Determination of Particulate and Gaseous Arsenic Emissions

METHOD 108—DETERMINATION OF PARTICULATE AND GASEOUS ARSENIC EMISSIONS

[Method 108 added by 51 FR 28025, August 4, 1986]

1. *Applicability and Principle*

1.1 Applicability. This method applies to the determination of inorganic arsenic (As)

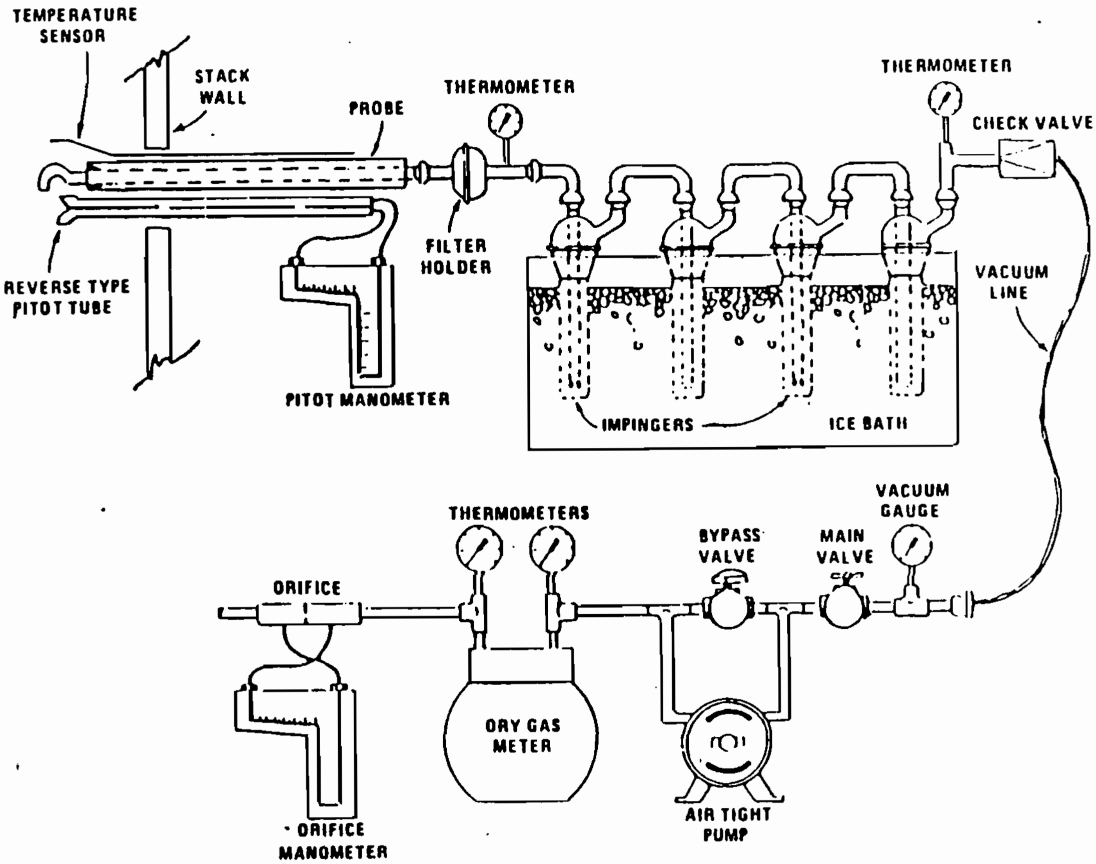


Figure 108-1. Arsenic sampling train.

[Appendix B, Method 108]

PLANT ____________

LOCATION ____________

OPERATOR ____________

DATE ____________

RUN NO. ____________

SAMPLE BOX NO. ____________

METER BOX NO. ____________

METER ΔH@ ____________

C FACTOR ____________

PITOT TUBE COEFFICIENT, C_p ____________

SCHEMATIC OF STACK CROSS SECTION

AMBIENT TEMPERATURE ____________

BAROMETRIC PRESSURE ____________

ASSUMED MOISTURE, % ____________

PROBE LENGTH, m (ft) ____________

NOZZLE IDENTIFICATION NO. ____________

AVERAGE CALIBRATED NOZZLE DIAMETER, cm (in.) ____________

PROBE HEATER SETTING ____________

LEAK RATE, m^3/min, (cfm) ____________

PROBE LINER MATERIAL ____________

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE mm Hg (in Hg)	STACK TEMPERATURE (T_S) °C (°F)	VELOCITY HEAD (ΔP_S), mm (in) H_2O	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER mm H_2O (in. H_2O)	GAS SAMPLE VOLUME m^3 (ft^3)	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET °C (°F)	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET °C (°F)	FILTER HOLDER TEMPERATURE, °C (°F)	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER, °C (°F)
TOTAL							Avg.	Avg.		
AVERAGE							Avg.			

Figure 108-2. Arsenic field data.

4.2 Sample Recovery. The same as Method 5, Section 4.2 except that 0.1 N NaOH is used as the cleanup solvent instead of acetone and that the impinger water is treated as follows:

Container Number 4 (Impinger Water). Clean each of the first two impingers and connecting glassware in the following manner:

a. Wipe the impinger ball joints free of silicone grease, and cap the joints.

b. Weigh the impinger and liquid to within ± 0.5 g. Record in the log the weight of liquid along with a notation of any color or film observed in the impinger catch. The weight of liquid is needed along with the silica gel data to calculate the stack gas moisture content.

c. Rotate and agitate each impinger, using the impinger contents as a rinse solution.

d. Transfer the liquid to Container Number 4. Remove the outlet ball-joint cap, and drain the contents through this opening. Do not separate the impinger parts (inner and outer tubes) while transferring their contents to the cylinder.

e. (Note: In Steps e and f below, measure and record the total amount of 0.1 N NaOH used for rinsing.) Pour approximately 30 ml of 0.1 NaOH into each of the first two impingers, and agitate the impingers. Drain the 0.1 N NaOH through the outlet arm of each impinger into Container Number 4. Repeat this operation a second time; inspect the impingers for any abnormal conditions.

f. Wipe the ball joints of the glassware connecting the impingers and the back half of the filter holder free of silicone grease, and rinse each piece of glassware twice with 0.1 N NaOH; transfer this rinse into Container Number 4. (DO NOT RINSE or brush the glass-fritted filter support.) Mark the height of the fluid level to determine whether leakage occurs during transport. Label the container to identify clearly its contents.

4.2.1 Blanks. Save a portion of the 0.1 N NaOH used for cleanup as a blank. Take 200 ml of this solution directly from the wash bottle being used and place it in a plastic sample container labeled "NaOH blank." Also save a sample of the water, and place it in a container labeled "H_2O blank."

4.3 Arsenic Sample Preparation.

4.3.1 Container Number 1 (Filter). Place the filter and loose particulate matter in a 150-ml breaker. Also, add the filtered material from Container Number 2 (see Section 4.3.3). Add 50 ml of 0.1 N NaOH. Then stir and warm on a hot-plate at low heat (do not boil) for almost 15 minutes. Add 10 ml of concentrated HNO_3, bring to a boil, then simmer for abut 15 minutes. Filter the solution through a glass fiber filter. Wash with hot water, and catch the filtrate in a clean 150-ml breaker. *Boil the filtrate, and evaporate to dryness.* Cool, add 5 ml of 50 percent HNO_3, and then warm and stir. Allow to cool. Transfer to a 50-ml volumetric flask, dilute to volume with water and mix well.

4.3.2 Container Number 4 (Arsenic Impinger Sample).

Note: Prior to analysis, check the liquid level in Containers Number 2 and Number 4; confirm as to whether leakage occurred during transport on the analysis sheet. If a noticeable amount of leakage occurred, either void the sample or take steps, subject to the approval of the Administrator, to adjust the final results.

Transfer the contents of Container Number 4 to a 500-ml volumetric flask, and dilute to exactly 500 ml with water. Pipet 50 ml of the solution into a 150-ml beaker. Add 10 ml of concentrated HNO_3, bring to a boil, and evaporate to dryness. Allow to cool, add 5 ml of 50 percent HNO_3, and then warm and stir. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute to volume with water, and mix well.

4.3.3 Container Number 2 (Probe Wash). See note in 4.3.2 above. Filter (using a glass fiber filter) the contents of Container Number 2 into a 200-ml volumetric flask. Combine the filtered material with the contents of Container Number 1 (Filter).

Dilute the filtrate to exactly 200 ml with water. Then pipet 50 ml into a 150-ml beaker. Add 10 ml of concentrated HNO_3, bring to a boil, and evaporate to dryness. Allow to cool, add 5 ml of 50 percent HNO_3, and then warm and stir. Allow the solution to cool, transfer to a 50-ml volumetric flask, dilute to volume with water, and mix well.

4.3.4 Filter Blank. Determine a filter blank using two filters from each lot of filters used in the sampling. Cut each filter into strips, and treat each filter individually as directed in Section 4.3.1, beginning with the sentence. "Add 50 ml of 0.1 N NaOH."

4.3.5 0.1 N NaOH and Water Blanks. Treat separately 50 ml of 0.1 N NaOH and 50 ml water, as directed under Section 4.3.2, beginning with the sentence, "Pipet 50 ml of the solution into a 150-ml beaker."

4.4 Spectrophotometer Preparation. Turn on the power; set the wavelength, slit width, and lamp current; and adjust the background corrector as instructed by the manufacturer's manual for the particular atomic absorption spectrophotometer. Adjust the burner and flame characteristics as necessary.

4.5 Analysis.

4.5.1 Arsenic Determination. Prepare standard solutions as directed under Section 5.1, and measure their absorbances against 0.8 N HNO_3. Then, determine the absorbances of the filter blank and each sample using 0.8 N HNO_3 as a reference. If the sample concentration falls outside the range of the calibration curve, make an appropriate dilution with 0.8 N HNO_3 so that the final concentration falls within the range of the curve. Determine the arsenic concentration in the filter blank (i.e., the average of the two blank values from each lot). Next, using the appropriate standard curve, determine the arsenic concentration in each sample fraction.

4.5.1.1 Arsenic Determination at Low Concentration. The lower limit of flame atomic absorption spectrophotometry is 10 μg As/ml. If the arsenic concentration of any sample is at a lower level, use the graphite furnace or vapor generation which is available as an accessory component. The analyst also has the option of using either of these accessories for samples whose concentrations are between 10 and 30 μg/ml. Follow the manufacturer's instructions in the use of such equipment.

[Appendix B, Method 108]

4.5.1.1.1 Vapor Generator Procedure. Place a sample containing between 0 and 5 μg of arsenic in the reaction tube, and dilute to 15 ml with water. Since there is some trial and error involved in this procedure, it may be necessary to screen the samples by conventional atomic absorption until an approximate concentration is determined. After determining the approximate concentration, adjust the volume of the sample accordingly. Pipet 15 ml of concentrated HCl into each tube. Add 1 ml of 30 percent KI solution. Place the reaction tube into a 50°C water bath for 5 minutes. Cool to room temperature. Connect the reaction tube to the vapor generator assembly. When the instrument response has returned to baseline, inject 50.0 ml of 5 percent $NaBH_4$, and integrate the resulting spectrophotometer signal over a 30-second time period.

4.5.1.1.2 Graphite Furnace Procedure. Dilute the digested sample so that a 5-ml aliquot contains less than 1.5 μg of arsenic. Pipet 5 ml of this digested solution into a 10-ml volumetric flask. Add 1 ml of the 1 percent nickel nitrate solution, 0.5 ml of 50 percent HNO_3, and 1 ml of the 3 percent hydrogen peroxide and dilute to 10 ml with water. The sample is now ready to inject in the furnace for analysis.

Because instruments from different manufacturers are different, no detailed operating instructions will be given here. Instead, the analyst should follow the instructions provided with his particular instrument.

4.5.1.2 Check for Matrix Effects on the Arsenic Results. Same as Method 12, Section 5.4.2.

4.5.2 Container Number 3 (Silica Gel). The tester may conduct this step in the field. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g; record this weight.

4.6 Audit Analysis. Concurrently, analyze the two unknown audit samples with each set of compliance samples to evaluate the techniques of the analyst and the standards preparation. (Note: It is recommended that known quality control samples be analyzed prior to the compliance and audit sample analysis to optimize the system's accuracy and precision. One source of these samples is the Source Branch listed in Section 3.3.16.) The same analyst, analytical reagents, and analytical system shall be used both for each set or sets of compliance samples and the EPA audit samples; if this condition is met, audit samples need not be included with any additional compliance analyses performed within the succeeding 30-day period for the same enforcement agency. An audit sample set may not be used to validate different sets of compliance samples under the jurisdiction of different enforcement agencies unless prior arrangements are made with both enforcement agencies.

Calculate the concentration in g/m^3 using the specified sample volume in the audit instructions. (Note: The analyst may determine immediately whether the audit analyses acceptable by reporting the audit results in g/m^3 and compliance results in μg/ml by telephone). Include the results of both audit samples, their identification numbers, and the analysts' names with the results of the compliance determination samples in appropriate reports to the EPA regional office or the appropriate enforcement agency. Include this information with subsequent compliance analyses for the same enforcement agency during the succeeding 30-day period.

5. Calibration

Maintain a laboratory log of all calibrations.

5.1 Standard Solutions. For the high level procedure pipet 1, 3, 5, 8, and 10 ml of the 1.0 mg As/ml stock solution into separate 100-ml volumetric flasks, each containing 5 ml of concentrated HNO_3. If the low level vapor generation procedure is used, pipet 1, 2, 3, and 5 ml of 1.0 μg As/ml standard solution into the separate reaction tubes. For the low level graphite furnace procedure, pipet 1, 5, 10 and 15 ml of 1.0 μg As/ml standard solution into the separate flasks along with 2 ml of the 5 percent nickel nitrate solution and 10 ml of the 3 percent hydrogen peroxide solution. Dilute to the mark with water. Then treat the standards in the same manner as the samples (Section 4.5.1).

Check these absorbances frequently against 0.8 N HNO_3 (reagent blank) during the analysis to insure that baseline drift has not occurred. Prepare a standard curve of absorbance versus concentration. (Note: For instruments equipped with direct concentration readout devices, preparation of a standard curve will not be necessary.) In all cases, follow calibration and operational procedures in the manufacturers' instruction manual.

[5.1 corrected by 51 FR 35354, October 3, 1986); 53 FR 36972, September 23, 1988]

5.2 Sampling Train Calibration. Calibrate the sampling train components according to the indicated Sections of Method 5. Probe Nozzle (Section 5.1), Pitot Tube Assembly (Section 5.2), Metering System (Section 5.3), Probe Heater (Section 5.4), Temperature Gauges (Section 5.5), Leak-Check of Metering System (Section 5.6), and Barometer (Section 5.7).

6. Calculations

6.1 Nomenclature—

B_{ws} = Water in the gas stream, proportion by volume.

C_a = Concentration of arsenic as read from the standard curve, μg/ml.

C_c = Actual audit concentration, g/m^3.

C_d = Determined audit concentration, g/m^3.

C_s = Arsenic concentration in stack gas, dry basis, converted to standard conditions, g/dsm^3 (g/dscf).

E_a = Arsenic mass emission rate, g/hr.

F_d = Dilution factor (equals 1 if the sample has not been diluted).

I = Percent of isokinetic sampling.

m_{bi} = Total mass of all four impingers and contents before sampling, g.

m_{fi} = Total mass of all four impingers and contents after sampling, g.

m_n = Total mass of arsenic collected in a specific part of the sampling train, μg.

m_t = Total mass of arsenic collected in the sampling train, μg.

T_m = Absolute average dry gas meter temperature (see Figure 108-2), °K (°R).

V_m = Volume of gas sample as measured by the dry gas meter, dm^3 (dcf).

$V_{m(std)}$ = Volume of gas sample as measured by the dry gas meter corrected to standard conditions, sm^3 (scf).

V_n = Volume of solution in which the arsenic is contained, ml.

$V_{w(std)}$ = Volume of water vapor collected in the sampling train, corrected to standard conditions, sm^3 (scf).

ΔH = Average pressure differential across the orifice meter (see Figure 108-2), mm H_2O (in. H_2O).

6.2 Average dry gas meter temperatures (T_m) and average orifice pressure drop (ΔH). See data sheet (Figure 108-2).

6.3 Dry Gas Volume. Using data from this test, calculate $V_{m(std)}$ by using Eq. 5-1 of Method 5. If necessary, adjust the volume for leakages.

6.4 Volume of Water Vapor.

$V_{w(std)} = K_1 (m_n - m_{bi})$ Eq. 108-1

Where:

K_1 = 0.001334 m^3/g for metric units.

K_1 = 0.047012 ft^3/g for English units.

6.5 Moisture Content.

$$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}} \quad \text{Eq. 108-2}$$

6.6 Amount of arsenic collected.

6.6.1 Calculate the amount of arsenic collected in each part of sampling train, as follows:

$m_n = C_a F_d V_n$ Eq. 108-3

6.6.2 Calculate the total amount of arsenic collected in the sampling train as follows:

$m_t = m_n(\text{filters}) + m_n(\text{probe}) + m_n(\text{impingers}) - m_n(\text{filter blank}) - m_n(NaOH) - m_n(H_2O)$ Eq. 108-4

6.7 Calculate the arsenic concentration in the stack gas (dry basis, adjusted to standard conditions) as follows:

$C_a = K_2(m_t/V_{m(std)})$ Eq. 108-5

Where:

$K_2 = 10^{-6} g/\mu g$

6.8 Pollutant Mass Rate. Calculate the arsenic mass emission rate using the following equation.

$E_a = C_s Q_{sd}$ Eq. 108-6

The volumetric flow rate, Q_{sd}, should be calculated as indicated in Method 2.

6.9 Isokinetic Variation. Using data from this test, calculate I. Use Eq. 5-8 of Method 5.

6.10 Acceptance Results. Same as Method 5, Section 6.12.

6.11 Relative Error (RE) for QA Audits, Percent.

$$RE = \frac{C_d - C_c}{C_c} \times 100 \quad \text{Eq. 108-7}$$

7. *Bibliography*

1. Same as Citations 1 through 9 of Section 7, of Method 5.

2. Perkin Elmer Corporation, Analytical Methods for Atomic Absorption Spectrophotometry. 303-0152. Norwalk, Connecticut, September 1976, pp. 5-6.

3. Standard Specification for Reagent Water. In: Annual Book of American Society for Testing and Materials Standards. Part 31; Water, Atmospheric Analysis. American Society for Testing and Materials. Philadelphia, PA, 1974, pp. 40-42.

[Appendix B, Method 108A]

FLORIDA FIRST PROCESSING, INC.

ATTACHMENT D-6-4

CALCULATIONS OF INCINERATOR METALS FEED RATES AND WASTE FEED METALS CONCENTRATIONS FOR DESIGN OF TRIAL BURN TEST CONDITIONS

Spreadsheets for the calculation of metals feed rates to the incinerator and waste feed concentrations for trial burn tests two, three, and four are included in Tables D-6-4-1, D-6-4-2, and D-6-4-3. Maximum metals feed rates were determined based on the composition of wastes expected to be received at FFPI and on regulatory requirements. The required concentrations of metals in the waste feeds for trial burn tests two, three, and four were calculated assuming that the metals content of the surrogate wastes not spiked with metals is insignificant. If it is determined that unspkied wastes contain significant conecntrations of metals, the amount of metals added to the spiked wastes will be adjusted accordingly, such that the total metals feed rate for each trial burn test will be as specified in the trial burn plan,

TABLE D-6-4-1

TRIAL BURN TEST TWO - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TRIAL BURN TEST TWO - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TOTAL INCINERATOR WASTE FEED		PERCENT OF TOTAL METALS
HIGH-BTU LIQUID WASTE	5500 LB/HR	0.00%
LOW-BTU LIQUID WASTE SCC	3000 LB/HR	75.00%
BULK SOLID WASTE	0 LB/HR	0.00%
CONTAINERIZED SOLID WASTE	2500 LB/HR	0.00%
SLUDGE WASTE	3500 LB/HR	25.00%
DIRECT-BURN LIQUID WASTE	800 LB/HR	0.00%
TOTAL WASTE FEED TO INCINERATOR	15300 LB/HR	100.00%

MAXIMUM WASTE FEED COMPOSITION

CARCINOGENIC METALS		maximum wt. percent	TOTAL CONSTITUENT INPUT TO KILN/SCC FROM WASTE FEED	HI-BTU LIQUID	LOW-BTU LIQUID	DRUM WASTE	SLUDGE WASTE	DIRECT BURN
ARSENIC	As	0.010%	1.66E+00 lb/hr	0.000%	0.041%	0.000%	0.012%	0.000%
BERYLLIUM	Be	0.002%	3.31E-01 lb/hr	0.000%	0.008%	0.000%	0.002%	0.000%
CADMIUM	Cd	0.020%	3.31E+00 lb/hr	0.000%	0.083%	0.000%	0.024%	0.000%
CHROMIUM	tot. Cr	0.030%	4.96E+00 lb/hr	0.000%	0.124%	0.000%	0.035%	0.000%
CHROMIUM	100% Cr+6	0.030%	4.96E+00 lb/hr	0.000%	0.124%	0.000%	0.035%	0.000%
NONCARCINOGENIC METALS		**maximum wt. percent**						
ANTIMONY	Sb	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
BARIUM	Ba	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
LEAD	Pb	0.140%	2.32E+01 lb/hr	0.000%	0.579%	0.000%	0.165%	0.000%
MERCURY	Hg	0.050%	8.28E+00 lb/hr	0.000%	0.207%	0.000%	0.059%	0.000%
SILVER	Ag	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
THALLIUM	Tl	0.100%	1.66E+01 lb/hr	0.000%	0.414%	0.000%	0.118%	0.000%

BASED ON MAXIMUM WASTE FEED RATE TO KILN AND SCC OF 16550 LB/HR
BASED ON TOTAL OPERATION OF INCINERATOR FOR 8400 HR/YR

		TOTAL WATER	TOTAL ASH	TOTAL ORGANIC	TOTAL LB/HR
HIGH-BTU LIQUID WASTE	5500 LB/HR	0 LB/HR	0 LB/HR	5500 LB/HR	5500 LB/HR
LOW-BTU LIQUID WASTE	3000 LB/HR	2580 LB/HR	0 LB/HR	420 LB/HR	3000 LB/HR
BULK SOLID WASTE	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR
CONTAINERIZED SOLID WASTE	2500 LB/HR	125 LB/HR	2300 LB/HR	75 LB/HR	2500 LB/HR
SLUDGE WASTE	3500 LB/HR	875 LB/HR	1050 LB/HR	1575 LB/HR	3500 LB/HR
DIRECT-BURN LIQUID WASTE	800 LB/HR	0 LB/HR	0 LB/HR	800 LB/HR	800 LB/HR
	15300 LB/HR	3580 LB/HR	3350 LB/HR	8370 LB/HR	15300 LB/HR

	WATER	ASH	ORGANIC	TOTAL
HIGH-BTU LIQUID WASTE	0.00%	0.00%	100.00%	100.00%
LOW-BTU LIQUID WASTE	86.00%	0.00%	14.00%	100.00%
BULK SOLID WASTE	19.60%	58.40%	22.00%	100.00%
CONTAINERIZED SOLID WASTE	5.00%	92.00%	3.00%	100.00%
SLUDGE WASTE	25.00%	30.00%	45.00%	100.00%
DIRECT-BURN LIQUID WASTE	0.00%	0.00%	100.00%	100.00%

TABLE D-6-4-2

TRIAL BURN TEST THREE - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TRIAL BURN TEST THREE - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TOTAL INCINERATOR WASTE FEED		PERCENT OF TOTAL METALS
HIGH-BTU LIQUID WASTE SCC	2000 LB/HR	75.00%
HIGH-BTU LIQUID WASTE KILN	3800 LB/HR	0.00%
LOW-BTU LIQUID WASTE	1000 LB/HR	0.00%
DIRECT-BURN LIQUID WASTE	0 LB/HR	0.00%
CONTAINERIZED SOLID WASTE	6000 LB/HR	25.00%
SLUDGE WASTE	2000 LB/HR	0.00%
BULK SOLID WASTE	1750 LB/HR	0.00%
TOTAL WASTE FEED TO INCINERATOR	16550 LB/HR	100.00%

MAXIMUM WASTE FEED COMPOSITION

CARCINOGENIC METALS		maximum wt. percent	TOTAL CONSTITUENT INPUT TO KILN/SCC FROM WASTE FEED	HI-BTU LIQUID	LOW-BTU LIQUID	DRUM WASTE	SLUDGE WASTE	BULK SOILD
ARSENIC	As	0.010%	1.66E+00 lb/hr	0.062%	0.000%	0.007%	0.000%	0.000%
BERYLLIUM	Be	0.002%	3.31E-01 lb/hr	0.012%	0.000%	0.001%	0.000%	0.000%
CADMIUM	Cd	0.020%	3.31E+00 lb/hr	0.124%	0.000%	0.014%	0.000%	0.000%
CHROMIUM	tot. Cr	0.030%	4.96E+00 lb/hr	0.186%	0.000%	0.021%	0.000%	0.000%
CHROMIUM	100% Cr+6	0.030%	4.96E+00 lb/hr	0.186%	0.000%	0.021%	0.000%	0.000%
NONCARCINOGENIC METALS		**maximum wt. percent**						
ANTIMONY	Sb	0.300%	4.96E+01 lb/hr	1.862%	0.000%	0.207%	0.000%	0.000%
BARIUM	Ba	0.300%	4.96E+01 lb/hr	1.862%	0.000%	0.207%	0.000%	0.000%
LEAD	Pb	0.140%	2.32E+01 lb/hr	0.869%	0.000%	0.097%	0.000%	0.000%
MERCURY	Hg	0.050%	8.28E+00 lb/hr	0.310%	0.000%	0.034%	0.000%	0.000%
SILVER	Ag	0.300%	4.96E+01 lb/hr	1.862%	0.000%	0.207%	0.000%	0.000%
THALLIUM	Tl	0.100%	1.66E+01 lb/hr	0.621%	0.000%	0.069%	0.000%	0.000%

BASED ON MAXIMUM WASTE FEED RATE TO KILN AND SCC OF 16550 LB/HR
BASED ON TOTAL OPERATION OF INCINERATOR FOR 8400 HR/YR

		TOTAL WATER	TOTAL ASH	TOTAL ORGANIC	TOTAL LB/HR
HIGH-BTU LIQUID WASTE	5800 LB/HR	0 LB/HR	0 LB/HR	5800 LB/HR	5800 LB/HR
LOW-BTU LIQUID WASTE	1000 LB/HR	860 LB/HR	0 LB/HR	140 LB/HR	1000 LB/HR
BULK SOLID WASTE	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR
CONTAINERIZED SOLID WASTE	6000 LB/HR	300 LB/HR	5520 LB/HR	180 LB/HR	6000 LB/HR
SLUDGE WASTE	2000 LB/HR	500 LB/HR	600 LB/HR	900 LB/HR	2000 LB/HR
DIRECT-BURN LIQUID WASTE	1750 LB/HR	0 LB/HR	0 LB/HR	1750 LB/HR	1750 LB/HR
	16550 LB/HR	1660 LB/HR	6120 LB/HR	8770 LB/HR	16550 LB/HR

	WATER	ASH	ORGANIC	TOTAL
HIGH-BTU LIQUID WASTE	0.00%	0.00%	100.00%	100.00%
LOW-BTU LIQUID WASTE	86.00%	0.00%	14.00%	100.00%
BULK SOLID WASTE	19.60%	58.40%	22.00%	100.00%
CONTAINERIZED SOLID WASTE	5.00%	92.00%	3.00%	100.00%
SLUDGE WASTE	25.00%	30.00%	45.00%	100.00%
DIRECT-BURN LIQUID WASTE	0.00%	0.00%	100.00%	100.00%

TABLE D-6-4-3

TRIAL BURN TEST FOUR - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TRIAL BURN TEST FOUR - METALS FEED RATES AND WASTE FEED CONCENTRATIONS

TOTAL INCINERATOR WASTE FEED		PERCENT OF TOTAL METALS
HIGH-BTU LIQUID WASTE	5500 LB/HR	0.00%
LOW-BTU LIQUID WASTE SCC	3000 LB/HR	75.00%
BULK SOLID WASTE	0 LB/HR	0.00%
CONTAINERIZED SOLID WASTE	2500 LB/HR	0.00%
SLUDGE WASTE	3500 LB/HR	25.00%
DIRECT-BURN LIQUID WASTE	800 LB/HR	0.00%
TOTAL WASTE FEED TO INCINERATOR	15300 LB/HR	100.00%

MAXIMUM WASTE FEED COMPOSITION

CARCINOGENIC METALS		maximum wt. percent	TOTAL CONSTITUENT INPUT TO KILN/SCC FROM WASTE FEED	HI-BTU LIQUID	LOW-BTU LIQUID	DRUM WASTE	SLUDGE WASTE	DIRECT BURN
ARSENIC	As	0.020%	3.31E+00 lb/hr	0.000%	0.083%	0.000%	0.024%	0.000%
BERYLLIUM	Be	0.002%	3.31E-01 lb/hr	0.000%	0.008%	0.000%	0.002%	0.000%
CADMIUM	Cd	0.030%	4.96E+00 lb/hr	0.000%	0.124%	0.000%	0.035%	0.000%
CHROMIUM	tot. Cr	0.040%	6.62E+00 lb/hr	0.000%	0.166%	0.000%	0.047%	0.000%
CHROMIUM	100% Cr+6	0.040%	6.62E+00 lb/hr	0.000%	0.166%	0.000%	0.047%	0.000%
NONCARCINOGENIC METALS		maximum wt. percent						
ANTIMONY	Sb	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
BARIUM	Ba	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
LEAD	Pb	0.350%	5.79E+01 lb/hr	0.000%	1.448%	0.000%	0.414%	0.000%
MERCURY	Hg	0.050%	8.28E+00 lb/hr	0.000%	0.207%	0.000%	0.059%	0.000%
SILVER	Ag	0.300%	4.96E+01 lb/hr	0.000%	1.241%	0.000%	0.355%	0.000%
THALLIUM	Tl	0.100%	1.66E+01 lb/hr	0.000%	0.414%	0.000%	0.118%	0.000%

BASED ON MAXIMUM WASTE FEED RATE TO KILN AND SCC OF 16550 LB/HR
BASED ON TOTAL OPERATION OF INCINERATOR FOR 8400 HR/YR

		TOTAL WATER	TOTAL ASH	TOTAL ORGANIC	TOTAL LB/HR
HIGH-BTU LIQUID WASTE	5500 LB/HR	0 LB/HR	0 LB/HR	5500 LB/HR	5500 LB/HR
LOW-BTU LIQUID WASTE	3000 LB/HR	2580 LB/HR	0 LB/HR	420 LB/HR	3000 LB/HR
BULK SOLID WASTE	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR	0 LB/HR
CONTAINERIZED SOLID WASTE	2500 LB/HR	125 LB/HR	2300 LB/HR	75 LB/HR	2500 LB/HR
SLUDGE WASTE	3500 LB/HR	875 LB/HR	1050 LB/HR	1575 LB/HR	3500 LB/HR
DIRECT-BURN LIQUID WASTE	800 LB/HR	0 LB/HR	0 LB/HR	800 LB/HR	800 LB/HR
	15300 LB/HR	3580 LB/HR	3350 LB/HR	8370 LB/HR	15300 LB/HR

	WATER	ASH	ORGANIC	TOTAL
HIGH-BTU LIQUID WASTE	0.00%	0.00%	100.00%	100.00%
LOW-BTU LIQUID WASTE	86.00%	0.00%	14.00%	100.00%
BULK SOLID WASTE	19.60%	58.40%	22.00%	100.00%
CONTAINERIZED SOLID WASTE	5.00%	92.00%	3.00%	100.00%
SLUDGE WASTE	25.00%	30.00%	45.00%	100.00%
DIRECT-BURN LIQUID WASTE	0.00%	0.00%	100.00%	100.00%

FLORIDA FIRST PROCESSING, INC.

ATTACHMENT D-6-5

EPA CORRESPONDENCE CONCERNING COMMENTS ON TRIAL BURN TEST METHODS AND TIER III DISPERSION MODELING FOR METALS EMISSIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

SEP 18 1989

4WD-RCRA

Mr. Robert Lanza
ICF Technology, Inc.
9300 Lee Highway
Fairfax, Virginia 22031-1207

RE: Follow-up to August 31, 1989, Meeting on Florida First Processing, Incorporated

Dear Mr. Lanza:

During referenced meeting, it was indicated that stack testing for the designated principle organic hazardous constituents (POHCs) will be done using the modified method 5 (MM5) sampling train, with the integrated gas bag sampling method as backup. After further review of this proposed testing methodology, we offer the following comments, as conveyed to you in the telephone call of September 13, 1989, from Mr. Hugh Hazen of my staff. We contacted Dr. Larry Johnson, a research chemist with EPA's Office of Research and Development concerning the use of the gas bag method as a backup for MM5 testing. Dr. Johnson is involved in the development of the methodology for integrated gas bag sampling. Dr. Johnson confirmed our thoughts that the gas bag method is not appropriate for solid POHCs, and he was skeptical about its use for the other POHCs selected. We would suggest conducting an additional run for each test as a backup rather than using the gas bag method.

Also, the Volatile Organic Sampling Train (VOST) should be used when sampling for carbon tetrachloride, since it has a boiling point of less than 100°C. The VOST method is applicable for capturing compounds with boiling points between 30 and 100°C. MM5 is designed to handle vapor phase organic compounds with boiling points greater than 100°C. The gas bag sampling method would be appropriate for obtaining backup samples during the VOST testing.

During the meeting it was mentioned that annual emission rates for air pollutants from the incinerator are based on 8400 hours operating time. For the Tier III metals modeling, 8760 hours operating time should be used rather than 8400 hours.

Regarding the selection of specific metal compounds for spiking the waste feeds during the testing, a copy of the document prepared by Energy and Environmental Research Corporation (EER) that was promised by Ms. Betty Willis at the meeting, is enclosed. Also enclosed is a copy of a memorandum to the file outlining our understanding of the discussions at the meeting.

If you have any questions regarding this letter, or if the contents of our memorandum regarding the August 31, 1989, meeting are not consistent with your understanding, please contact Hugh Hazen or Betty Willis at (404) 347-3433.

Sincerely yours,

James H. Scarbrough, P.E.
Chief, RCRA Branch
Waste Management Division

Enclosures

cc: Satish Kastury, FDER, Tallahassee
Bill Crawford, FDER, Southwest District